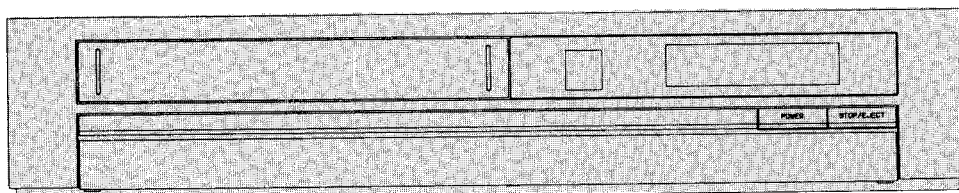


**HQ**

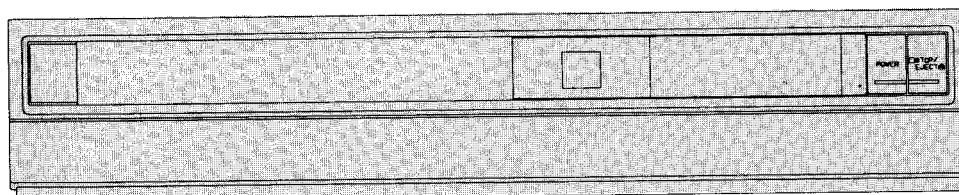
SERVICE MANUAL

SVM-P13-007-1E
68139 - 132 - 107**MODEL : VK-3260/VK-3261
VK-3230/VK-3231**

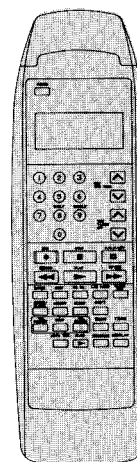
VIDEO CASSETTE RECORDER



(VK-3260/VK-3230)



(VK-3261/VK-3231)



(LDC REMOCON)

SPECIFICATIONS

Format : VHS PAL standard
Video Recording System : 2 Rotary Heads, Helical scanning system
Luminance ; FM Azimuth recording
Color ; Down converted subcarrier
phase shifted

Television System : PAL color and B/W signal

Tape Width : 12.65 mm (1/2 inch)

Tape Speed : SP ; 23.39 mm/sec

Recording/Playback Time : SP ; 4 hours with E-240 type

FF/REW Time : Less than 5 min. with E-180

Heads : Video ; 2 Rotary Heads
Audio/Control ; 1 stationary head
Erase ; 1 full track erase

VIDEO

Input : 0.5 to 2.0 V_{p-p} ; 75 ohm unbalanced

Output : 1.0 V_{p-p} ; 75 ohm unbalanced

Signal-to-Noise Ratio : Better than 43 dB

Horizontal Resolution : More than 240 Lines

AUDIO

Input : Line ; -8 dBm, 50 K Ω unbalanced

Output : Line ; -4 dBm, 1 K Ω unbalanced

Wow-Flutter (WTD): 0.4 % Max

Frequency Response : 100 Hz ~ 8 KHz

Receiving Channel : VHF LOW, VHF HIGH, UHF

Power Requirement : 220 ~ 240V AC/50Hz

Power Consumption : Approx. 30 watts

Operation Temperature : 41 ° F ~ 104 ° F (5 ° C ~ 40 ° C)

Operation Humidity : 10 % ~ 75 %

Weight : 5.5 Kg

Dimensions : 420 (W) x 80 (H) x 315 (D) mm

Designs and specification are subject to change without notice.

CONTENTS

1. GENERAL DESCRIPTION

1-1. Safety Precautions	1-1
1-2. General Information	1-3
1-3. Operation Controls and Functions	1-4
1-4. Replacement of Chip Parts	1-11
1-5. How to Identify Leadless (CHIP) Component	1-12
1-6. Cleaning and Lubrication	1-13
1-7. Abbreviations	1-14

2. DISASSEMBLY

2-1. Instrument Disassembly	2-1
2-1-1. Top Cabinet Removal	2-1
2-1-2. Bottom Cover Removal	2-1
2-1-3. Front Panel Removal	2-1
2-2. Circuit Board Disassembly	2-2
2-2-1. Function Circuit Board Removal	2-2
2-2-2. Timer Circuit Board Removal	2-2
2-2-3. Main Circuit Board Removal	2-2
2-2-4. Pre-Amp Circuit Board Removal	2-2
2-2-5. Regulator Ass'y Removal	2-2
* Circuit Boards Location	2-3
2-3. Tape Transport Mechanism Identification	2-4
2-3-1. Top View	2-4
2-3-2. Bottom View	2-5
2-4. Housing Ass'y Removal & Reassembly	2-6
2-4-1. Housing Ass'y Removal	2-6
2-4-2. Upper Chassis & Cassette Holder Ass'y Removal	2-6
2-4-3. Side Chassis "L", "R" Ass'y Removal	2-7
2-4-4. Rack Gear & Joint Gear Removal	2-7
2-4-5. Reinstallation of Rack Gear and Joint Gear	2-8
2-4-6. Reassembly of Joint Gear & Arm Gear	2-9
2-4-7. Reinstallation of Housing Ass'y	2-9
2-4-8. How to Operation Unit without the Housing Ass'y	2-10
2-5. Cylinder Ass'y Removal & Reassembly	2-11
2-5-1. Cylinder Ass'y Removal from Main Base	2-11
2-5-2. Exploded View of Cylinder Ass'y	2-11
2-5-3. Upper Cylinder Ass'y Removal	2-12
2-5-4. Lower Cylinder Ass'y Removal	2-12
2-5-5. Cylinder Motor Removal	2-13
2-5-6. Assembly of Lower Cylinder	2-13
2-5-7. Assembly of Upper Cylinder	2-14
2-5-8. Assembly of Cylinder Ass'y	2-14
2-6. Reel Disk Ass'y Removal	2-15
2-6-1. Brake Sub "L" Removal	2-15
2-6-2. Gear Relay S2 & S3 Removal	2-15
2-6-3. Full Arm Tension Ass'y Removal	2-15
2-6-4. Reel Disk "L" Ass'y & Gear Relay S1 Removal	2-15
2-6-5. Brake Sub "R" Removal	2-16
2-6-6. Brake Main "L" & "R" Ass'y Removal	2-16

2-6-7. Reel Disk "R" Ass'y & Gear Relay "T" Removal	2-16
2-6-8. Idler Sub Ass'y Removal	2-17
2-6-9. Lever REC S/W Removal	2-17
2-7. Loading & Capstan Motor Ass'y Removal & Reassembly	2-18
2-7-1. Belt Capstan Removal	2-18
2-7-2. Motor D/D Capstan Removal	2-18
2-7-3. Bracket Eject Drive & Deck Joint PCB Ass'y Removal	2-18
2-7-4. Clutch Ass'y Removal	2-19
2-7-5. Gear Master & Gear Eject Drive Removal	2-19
2-7-6. L/D Unit Ass'y & Gear Worm Wheel Removal	2-19
2-7-7. Slide Main Removal	2-19
2-7-8. Brake D/D Capstan Ass'y Removal	2-20
2-7-9. Slide I.B Ass'y Removal	2-20
2-7-10. Lever Shift Removal	2-20
2-7-11. Lever tension Control Removal	2-20
2-7-12. Gear Loading "L", "R" Ass'y Removal	2-21
2-7-13. Review Arm Ass'y Removal	2-21
2-7-14. Drive Cam Pinch Ass'y Removal	2-21
2-7-15. Pinch Roller Unit & Gear Escalator Removal	2-21
2-7-16. Reassembly of Drive Pinch Ass'y and Gear Escalator	2-22
2-7-17. Reassembly of Full Review Arm Ass'y	2-23
2-7-18. Reassembly of Gear Loading "L", "R" Ass'y	2-23
2-7-19. Timing of Gear Master & Gear E/J Drive	2-23
2-7-20. Reassembly and Timing of Program S/W and Deck Joint PCB	2-24
2-8. Tape Transport Ass'y Removal & Reassembly ...	2-25
2-8-1. Pole Base "L", "R" Ass'y Removal & Reassembly	2-25
2-8-2. Head Magnetic F/E Removal & Reassembly ..	2-25
2-8-3. Ass'y A/C Full Removal & Reassembly	2-25

3. MECHANICAL ADJUSTMENT

3-1. Mechanical Adjustment Tool	3-1
3-2. Tape Transport System Adjustment Flow Chart..	3-3
3-3. Tape Transport System	3-5
3-3-1. Location of tape transport Adjustment	3-5
3-3-2. Tape transport System Adjustment	3-6
3-4. Reel Torque	3-10
3-4-1. General Features	3-10
3-4-2. Location of Tension Pole and Back Tension Adjustment	3-10
3-4-3. Reel Torque Adjustment	3-11

4. ELECTRICAL ADJUSTMENT

4-1. Preparations	4-1
4-2. Servo & Video Section	4-3
4-3. IF-PACK/Tuner & Audio Section	4-4
4-5. SECAM Section	4-5

5. MICOM IC PIN FUNCTION CHART/ PROGRAM SWITCH TIMING CHART

5-1. System and Timer Control IC Pin Function Description	5-1
5-2. Program Switch Timing Chart	5-5

6. ELECTRICAL REPLACEMENT PARTS LIST

6-1. General Information	6-1
6-2. Electrical Replacement Parts List	6-2

7. EXPLODED VIEWS

7-1. Instrument Assembly	7-2
7-2. Transport Mechanism Assembly	7-4
7-3. Bottom Side Mechanism Assembly	7-6
7-4. Housing Assembly	7-8

8. BLOCK DIAGRAMS

8-1. Total Wiring Diagram	8-2
8-2. Drum Phase Control	8-3
8-3. Drum Speed Control	8-3
8-4. Capstan Phase Control	8-4
8-5. Capstan Speed Control	8-4
8-6. Audio Playback Process	8-5
8-7. Audio Record Process	8-5
8-8. Luminance Playback Process	8-6
8-9. Luminance Record Process	8-7
8-10. Chrominance Playback Process	8-8
8-11. Chrominance Record Process	8-9

9. CIRCUIT BOARDS

9-1. Regulator	9-3
9-2. SOUND DUAL	9-5
9-3. SECAM COLOR	9-5
9-4. IF-PACK	9-7
9-5. O.S.D	9-7
9-6. Buffer	9-9
9-7. Pre-Amp	9-9
9-8. Main	9-11
9-9. Deck Joint	9-13
9-10. Function (VK-3260/VK-3230)	9-15
9-11. Function (VK-3261/VK-3231)	9-17
9-12. Timer (VK-3260/VK-3230)	9-19
9-13. Timer (VK-3261/VK-3231)	9-21

10. SCHEMATIC DIAGRAMS

10-1. Regulator	10-2
10-2. Power	10-3
10-3. System Control	10-4
10-4. Servo	10-6
10-5. Video/Buffer	10-8
10-6. Audio	10-10
10-7. Tuner/IF-PACK, SOUND DUAL	10-12
10-8. SECAM COLOR	10-13
10-9. Pre-Amp	10-14
10-10. O.S.D	10-16
10-11. Function/Timer (VK-3260/VK-3230)	10-18
10-12. Function/Timer (VK-3261/VK-3231)	10-19
10-13. Deck Joint	10-20
10-14. LCD Remote Control	10-21
10-15. NOT LCD Remote Control	10-22

1. GENERAL DESCRIPTION

1-1. SAFETY PRECAUTIONS

1. Before returning a Video Cassette Recorder to the customer, always make a safety check of the entire instrument, including, but not limited to the following items:

a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing.

(1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience.

(2) When reassembling the instrument, be sure to put back in place all protective devices, including, but not limited to nonmetallic control knobs, insulating, fish papers adjustment and compartment covers/shields, and isolation resistor/capacitor networks.

Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) excessively wide cabinet ventilation slots, and (2) improperly fitted and/or incorrectly secured cabinet covers.

c. **Antenna Cold Check** - With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, to each of the coaxial connectors.

If the measured resistance is less than 1.0 megaohm or greater than 5.2 megaohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

d. Leakage Current Hot Check - With the instrument completely reassembled plug the AC line cord directly into a 220 (240V-UK) AC outlet. (Do not use an isolation transformer during this test). Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal waterpipe, conduit, etc) to all exposed metal parts of the instrument (antennas, handle bracket, metal, etc), especially any exposed metal parts that offer an electrical return path to the chassis.

Any current measured must not exceed 0.5 milliamp.

Reverse the instrument power cord plug in the outlet and repeat test.

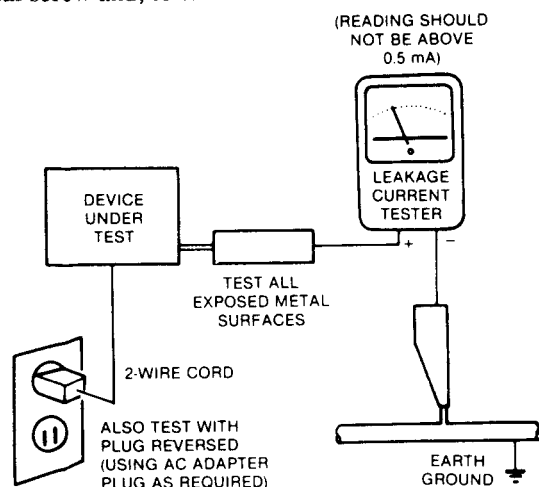
ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR CONNECTING ANTENNA OR ACCESSORIES.

e. AC Leakage Test

Avoid shock hazards. The television instrument, accessory, or cables (s) to which this VCR is connected should have the applicable sections of the leakage resistance antenna cold check and the leakage current hot check performed. Do not connect this VCR to a TV antenna, cable or accessory that exhibits excessive leakage currents.

2. Read and comply with all caution and safety related notes on or inside the VCR cabinet and chassis.

3. **Design Alteration Warning**-Do not alter or add to the mechanical or electrical of this Video Cassette Recorder. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this instrument and create a hazard to the user. Any design alterations or additions may void the manufacturer's warranty and may make you, the servicer responsible for personal injury or property damage resulting therefrom.



AC Leakage Test

4. Observe original lead dress. Take extra care to assure correct lead dress in the following areas : a) near sharp edges, b) near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c) the AC supply, and d) antenna wiring. Always inspect in all areas for pinched, out-of place, or frayed wiring between components and the printed circuit board. Check AC power cord for damage.

5. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take of corrective action to remove any potential safety hazard.

6. Product Safety Notice

Some electrical mechanical parts have special safety related characteristics which are often not evident from visual inspection, nor can protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a (*) or ($\triangle$) on schematics and parts list. Use of a substitute replacement that does have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards.

Products safety is under review continuously and new instructions are issued whenever appropriate.

Electrostatically Sensitive (ES) devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "antistatic" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive foam, aluminum foil or comparable conductive material).

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE

Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

IMPORTANT SAFETY NOTICES

Components identified with the mark $\triangle$ have the special characteristics for safety when replacing any of these components. Use only the same type.

1-2. GENERAL INFORMATION

- **VISS**

- **Index Search System**

- Index search system is the function of searching swiftly to previously designated points of interest on the tape using the index signal.

- **Index Search**

- Searches the wanted index points and plays back for five seconds at each point.

- **Intro-Scan**

- Skips the unwanted index points and plays back the selected point.

- **Marking Index Points**

- Press the recording button during the stop mode and the index signals are registered automatically. Auto register can be operated during pause recording or timer programming recording. The index indicator will blink on the display.

- **LTC (Linear Time Counter)**

- This function resets the counter when front loading starts after inserting a tape. Linear time counter indicates the elapsed time of the tape running as second.

- **OSD (On Screen Display)**

- The VCR modes will be indicated on the television screen in white characters.

- **Unattended (Timer) Recording**

- The programmable timer can be preselected up to one year in advance to record up to 8 preselected programmes. (Normal Programme or daily programme or weekly programme).

- The timer turns VCR on and off and changes channels automatically.

- **EPS (Easy Programming System)**

- This lets you record up to six hours without programming the timer. It also allows you to start (or continue) recording immediately.

- **F-Advance (Frame-Advance)**

- Push this button to give still frame, each successive press moves the picture on frame by frame. Then you can enjoy clear and distinct still picture.

- **Automatic Digital Tracking**

- This function automatically optimizes a clearer picture in playback mode.

- **Safety Lock System (Child Lock)**

- The play button on the VCR and remote control can be locked to prevent access by young children. This feature can be operated by the remote control only and EJECT mode only.

- **GO TO**

- When the LTS (Linear Time Search) function is recalled as a circuit function, the GO TO search function advances the tape in the FF/REW to the time position requested.

Note : On insertion of tape into machine linear time counter is set to zero irrespective of position of tape.

- **Skip Search**

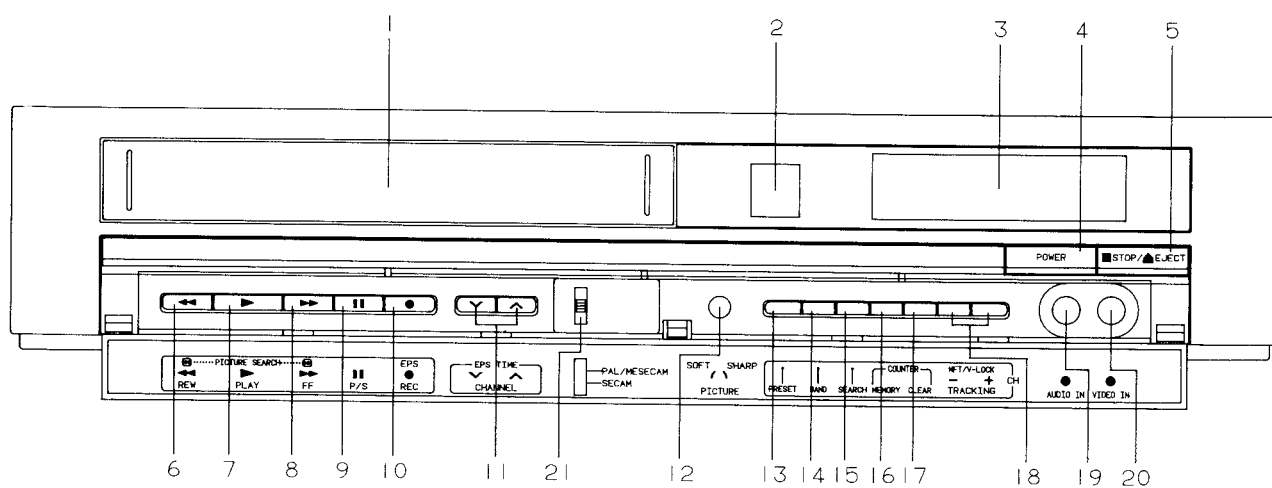
- During playback of tapes, press Skip Search button on the remote. The tape will playback automatically during forward search when the counter reaches one minute.

- **Quick Start**

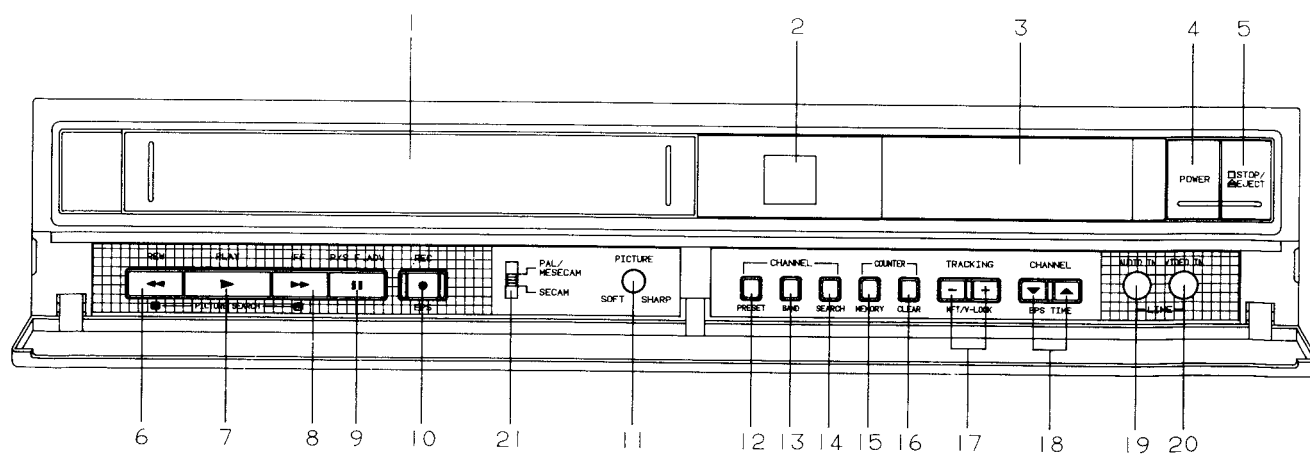
- This is to shorten the switching time from stop mode to play mode by having the tape deck fully loaded.

1-3. OPERATING CONTROLS AND FUNCTIONS

1-3-1. FRONT VIEW



(VK-3260/VK-3230)



(VK-3261/VK-3231)

1. VIDEO CASSETTE COMPARTMENT

Push the cassette gently into the compartment until you feel automatic pull. Cassette can be inserted with the Power off as long as unit is connected to an AC outlet.

2. INFRARED REMOTE SENSOR

Receives signal from infrared Remote Control.

3. FUNCTION DISPLAY INDICATORS

(Refer to page 1-7 for indications)

4. POWER Button

Push to turn VCR on and off.

Note: VCR turn on automatically when cassette is inserted.

5. STOP/EJECT Button

Press to stop tape during play, record, rewind or fast forward. If the button is pressed during Fully-Automatic play, the function will be cancelled.

When VCR is in STOP mode, press to remove the video cassette. Cassette can also be ejected when VCR power is off as long as unit is connected to an AC outlet.

6. REW (Rewind/Reverse Picture Search) Button

When VCR is in STOP mode, press REW to rewind the tape. When the VCR is in the PLAY mode, press REW for high-speed reverse picture search. Press REW again for Jet Search. (Push PLAY button in Jet Search mode to playback.)

7. PLAY Button

Push to playback a pre-recorded tape.

8. F.F (Fast Forward/Forward Picture Search) Button

When the VCR is in STOP mode, press FF to forward the tape. When the VCR is in the PLAY mode, press FF for high-speed forward picture search. Press FF again for Jet Search. (Push PLAY button in Jet Search mode to playback.)

9. P/S F.ADV Button

Push to stop the tape temporarily during playback or recording. Still picture will be shown during playback. Push PLAY to continue play, and push REC button to continue recording. In pause still mode, press to advance one frame at a time.

10. REC/EPS Buttons

Push the REC button to start recording. Press REC again to Easy Programming System.

11. CHANNEL UP/DOWN (EPS TIME) Buttons

Push to select the channel you wish to record or view on TV. Continuous holding of button will change the channels. In EPS mode, use this control to adjust of time. Whenever these buttons are pressed, the time goes up or down by 10 min.

12. SHARPNESS

Turn to soften or sharpen picture to your preference. (playback only)

13. PRESET Button

Press this button for setting TV channel programmes.

14. BAND Button

Use to select BAND in tuning mode. (VHF LOW, HIGH, UHF)

15. SEARCH Button

Press this button for automatic tuning channel.

16. MEMORY Button

Push this button-the tape will stop automatically during rewind when the counter reaches about "0H00M00S".

Push this button in CH preset mode to store the broadcast station.

17. CLEAR Button

Use to reset the counter to "0H00M00S" or to clear the clock setting data or to delete stored channel.

18. TRACKING/V-LOCK/MFT Button

- When you play a tape recorded on a different VCR horizontal streaks (noise bars) may appear in the picture. Press this button to remove noise bars.
- In still mode, adjust this control to minimize vertical shaking on the TV screen.
- In channel preset mode, adjust this control to tune for fine picture.

19. AUDIO IN jack

To record from an external audio source, connect this jack to the AUDIO output jack of an external audio source, such as a VCR, VCP, audio receiver or TV set.

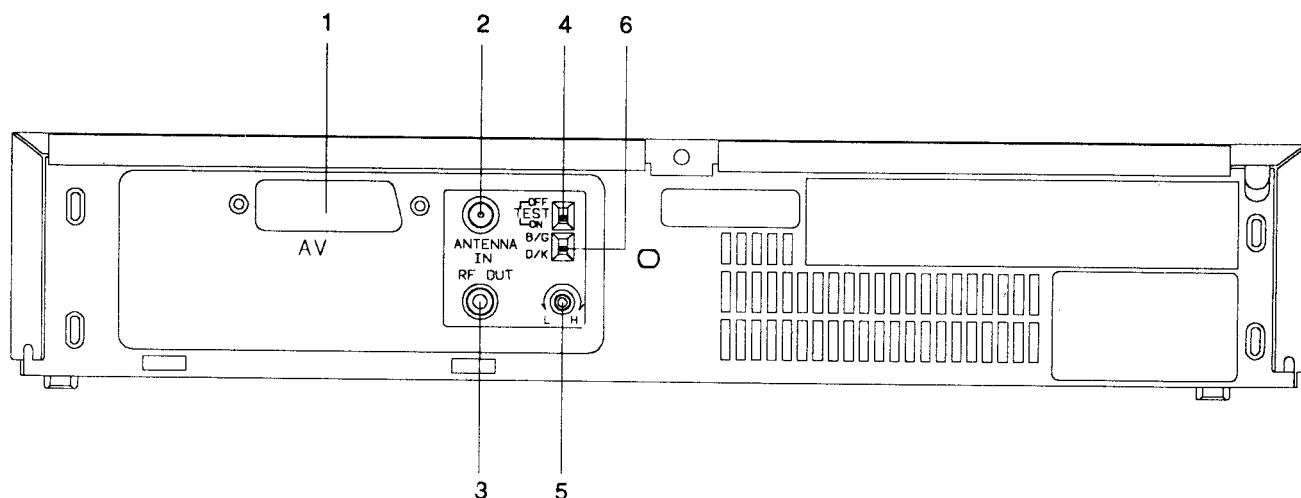
20. VIDEO IN jack

To record from an external video source, such as a VCP, VCR or TV set, connect this jack to the VIDEO output jack of one of those sources.

21. PAL/MESECAM, SECAM SELECT SWITCH

This switch is selected PAL/MESECAM and SECAM color system.

1-3-2. REAR VIEW



1. AUDIO/VIDEO Socket

A 21-pin standardized audio/video input/output socket for the connection to a stereo TV equipped with the same type of socket.

2. ANTENNA IN Connector

Connect an aerial to this connector.

3. RF OUT Connector

Connect to the aerial connector of a TV receiver through the RF cable (provided).

4. Test Signal Switch (TEST)

Set to ON when tuning your TV receiver for the video channel. A test signal in the form of two vertical white bars will be available.

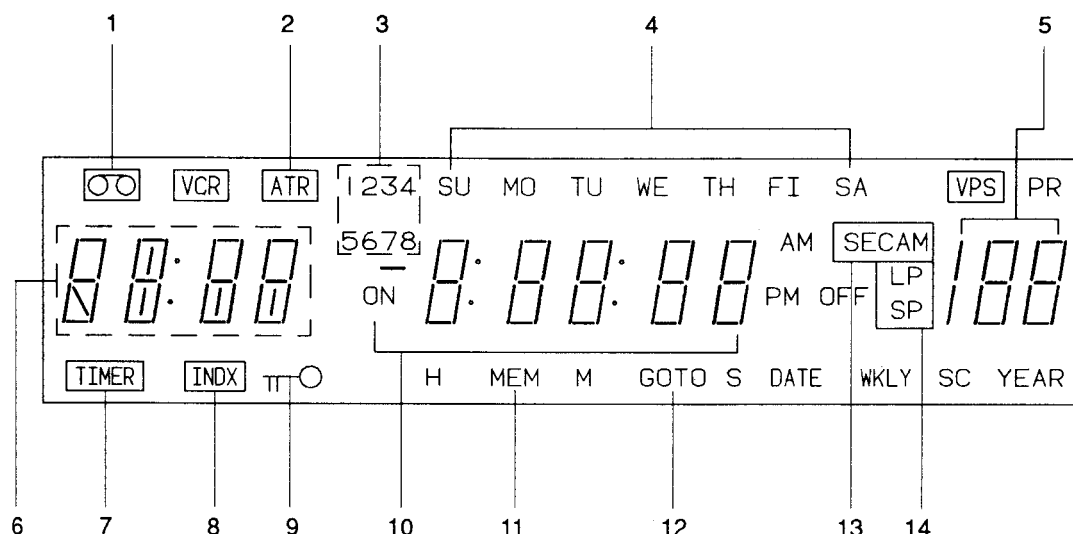
5. RF CHANNEL PRE-SET

In some areas the pre-set RF output of your video cassette recorder may clash with a TV broadcast. If this occurs rotate this control using a small screw-driver in a clockwise or counterclockwise direction. A new video channel has been set now and you will need to retune your television video channel to the new RF output.

6. D/K, B/G SELECT SWITCH

Power button must be turn off and on when you want to set this select switch the broadcast system of your area.

1-3-3. MULTIFUNCTION DISPLAY



1. Cassette-In indicator ()

This indicator lights when a cassette is properly inserted in the VCR.

2. ATR (Auto Tracking) indicator

Flashes when digital auto tracking is operating.

3. Programme Number indicator

Illuminates for programme number for timer recording.

4. DAY indicator

This indicator displays the day of the week set by the VCR clock for the present timer.

5. Channel indicator

Indicates the selected channel number. Also indicates the index number during index search, and programme number during intro scan.

6. Tape mode indicator

7. Timer indicator

When timer record mode is set, this indicator appears.

8. INDEX indicator

Appears during index search, intro scan and when index codes are added to the tape during recording.

9. Safety Lock indicator

Lights when the VCR's play button has been locked.

10. Clock/Tape counter display

Clock appears when VCR's power is off, tape counter appears when VCR's power is on. Also indicates the tuning position during station tuning.

11. MEMORY indicator

When MEMORY button is set to ON, this indicator appears.

12. GO TO indicator

At GO TO mode, this indicator lights.

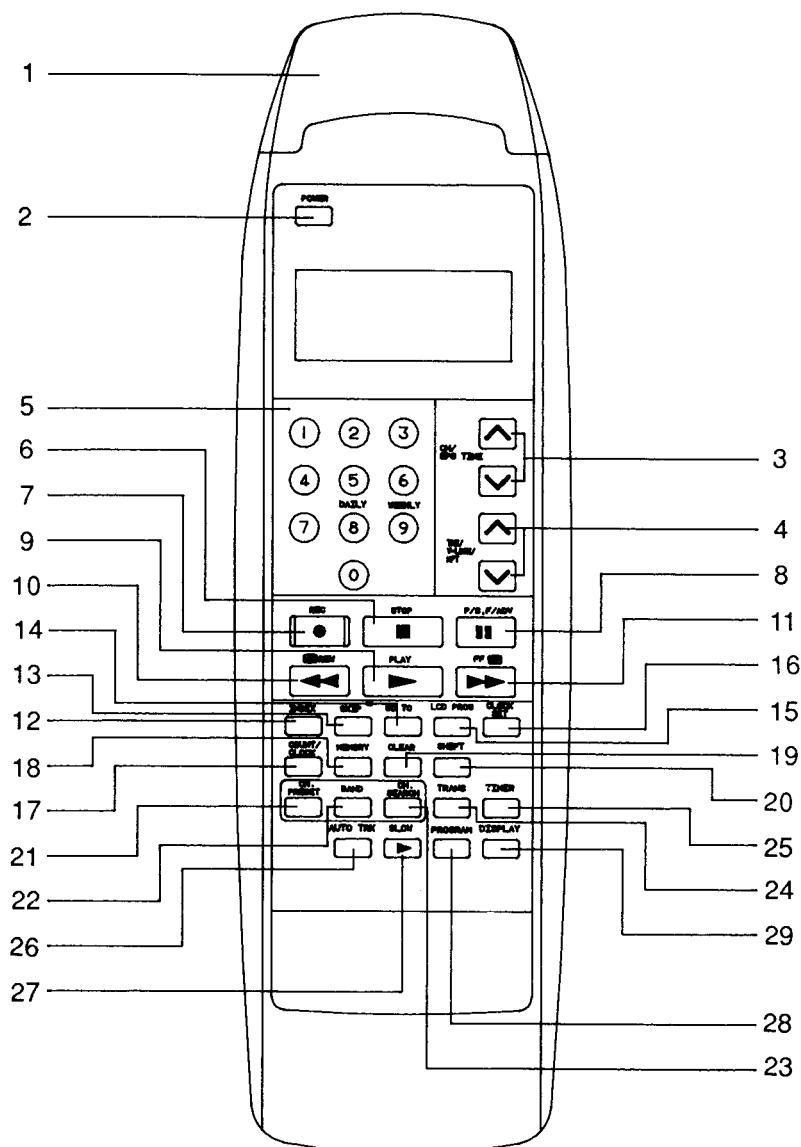
13. SECAM indicator

This indicator lights when MESECAM broadcasting is received and MESECAM tape is played back.

14. Tape speed indicators

Indicate the tape playback or recording speed.
SP : Standard play

1-3-4. REMOTE CONTROL



(VK-3260/VK-3261 - LCD REMOTE CONTROL)

1. WIRELESS TRANSMITTER

Point the end of remote control toward VCR.

2. POWER Button

Press to turn VCR on or off.

3. CH UP/DOWN (EPS TIME) Buttons

Push to select channel to view or record.

In EPS mode, set this control to adjust off time.

Whenever these buttons are pressed, the time goes up or down by 10 min.

4. TRACKING/V-LOCK/MFT Button

Press to remove the noise or streaks.

5. 10 KEY Buttons (0 through 9)

Press to enter channel to view or record.

Use for setting the clock and programming the timer.

6. STOP Button

Press to stop the tape.

7. REC Button

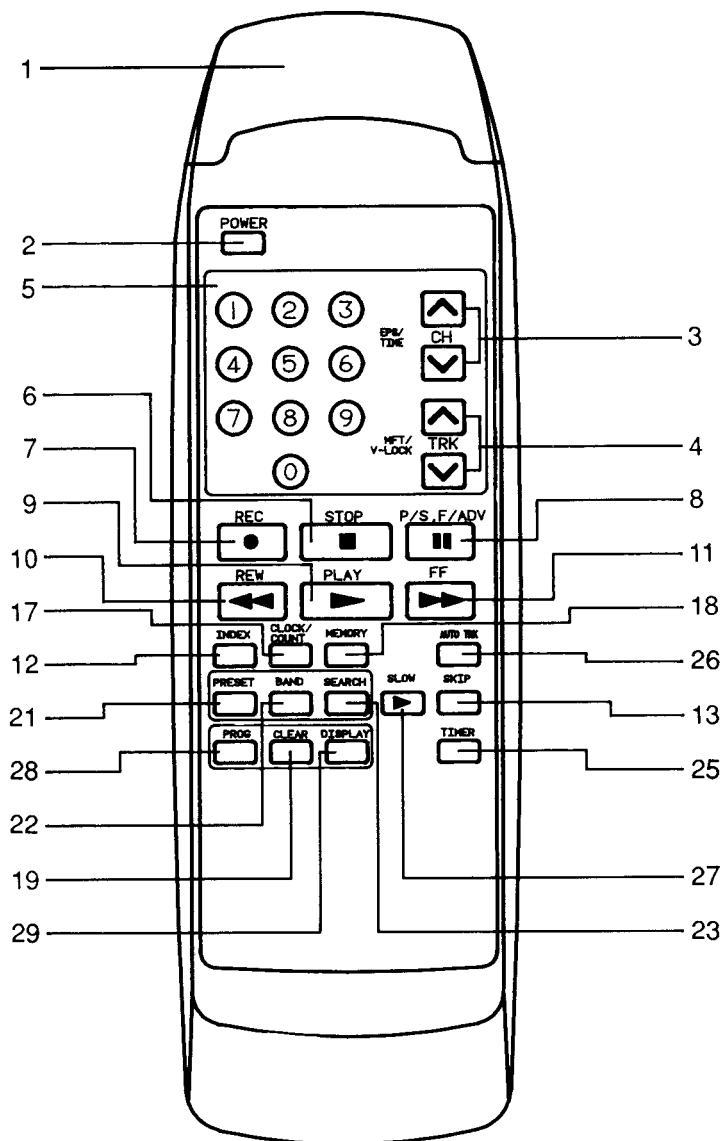
Press to start recording.

Press again for Easy Programming System.

8. P/S F.ADV Button

Press to stop the tape temporarily during playback or recording.

In still mode, press to advance one frame at a time.



(VK-3230/VK-3231 - NOT LCD REMOTE CONTROL)

9. PLAY Button

Press to playback prerecorded the tape.

10. REW (Rewind/Reverse Picture Search) Button

Press to rewind the tape. In the play mode, press for high speed reverse picture search.

Press PLAY to revert to playback.

11. F.F (Fast Forward/Forward Picture Search) Button

In the play mode, press for high speed forward picture search. Press and hold this button for jet search.

Press PLAY to revert to playback.

12. INDEX Button

Press to turn on the electronic programming index.

13. SKIP SEARCH Button

14. GO TO Button

Press this button for GO TO function.

15. LCD PROG Button

Press to enter remote control programming mode.

16. CLOCK SET Button

Press this button for clock setting.

17. COUNT/CLOCK Button

Press to switch between counter mode and clock mode.

18. MEMORY Button

Press to stop the tape automatically during rewind when the counter reaches about 0^H00^M0^S.

Press this button in CH preset mode to store the broadcast station.

19. CLEAR/RESET Button

Use to reset the counter to "0^H00^M0^S" or to clear the clock setting data and memorized channel.

20. SHIFT Button

Press to go to the next step while clock setting, LCD programming.

21. CH. PRESET Button

Press this button for setting TV channel programme.

22. BAND Button

Use to select BAND in Tuning mode.

23. CH. SEARCH Button

Press to commence the search for a broadcast station.

24. TRANS Button

Press to transfer LCD programme from remote control to VCR set.

25. TIMER Button

Press this button after programming for unattended recording.

26. AUTO TRACKING Button

Press to remove the noise bars.

27. SLOW Button

Press SLOW to begin slow motion.

28. PROGRAMME Button

Press to set clock or to program timer recording.

29. DISPLAY Button

Press once to show present status.

1-4. REPLACEMENT OF CHIP PARTS

1. Some resistors, shorting jumpers (0 Ω resistance), ceramic capacitors, transistors, and diodes are chip parts. These chip parts cannot be reused after they are once removed.

2. Additional compactness is achieved by using subminiature chip parts for certain circuit elements. When replacing these parts, note the cautions outlined below.

3. Required tools :

- 1) Fine tipped, well insulated soldering "pencil", about 30 Watts.
- 2) Tweezers
- 3) Blower type hair dryer.

4. Soldering cautions :

- 1) Do not apply heat for more than 3 seconds.
- 2) Avoid using a rubbing stroke when soldering.
- 3) Discard removed chips ; do not reuse them.
- 4) Supplementary cementing is not required.
- 5) Use care not to scratch or otherwise damage the chips.

5. Removal (resistors, capacitors, etc.) :

- 1) Melt the solder at one side.

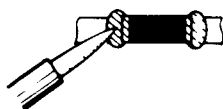


Fig. 1

- 2) Grasp the part with tweezers and melt the solder at the other side.

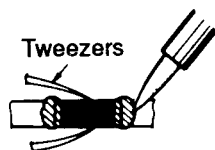


Fig. 2

- 3) Remove the part with a twisting motion.

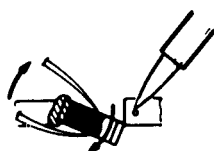


Fig. 3

6. Removal (transistors, diodes, etc.) :

- 1) Melt the solder of one lead.

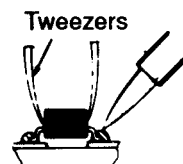


Fig. 4

- 2) Lift the side of that lead upward.

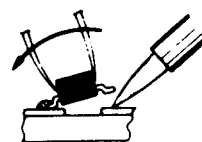


Fig. 5

- 3) Simultaneously heat solder of the two remaining leads and lift part to remove.

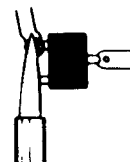


Fig. 6

7. Preheating (except for semiconductors) :

Immediately before installing new resistors or capacitors, use a blower type hair dryer and preheat the part for about two minutes at approximately 150°C.

8. Replacement :

- 1) Presolder the contact points of the circuit pattern.

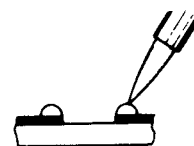


Fig. 7

- 2) Press the part downward with tweezers and apply the soldering pencil as indicated in the figure.

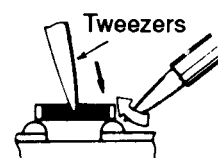


Fig. 8

1-5. HOW TO IDENTIFY LEADLESS (CHIP) COMPONENT

1-5-1. Check the following before M.E.L.F Troubleshooting

- * Cracked or chipped component body
- * Cracked or separated solder joints
- * Peeling end terminations or fractured leads
- * Rejection of solder from copper pads or component
- * Foreign matter on copper pads
- * Solder bridges

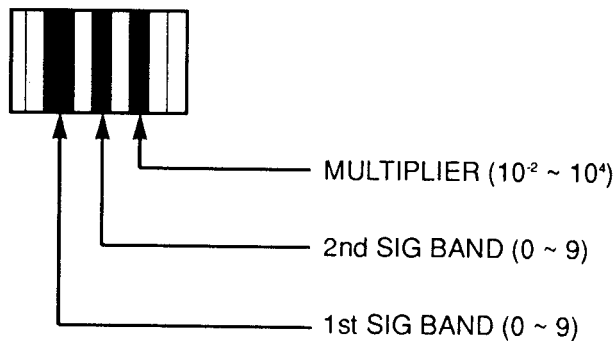
1-5-2. M.E.L.F (Metal-Electrode Face Bonding) Identification

1) Body Color Features

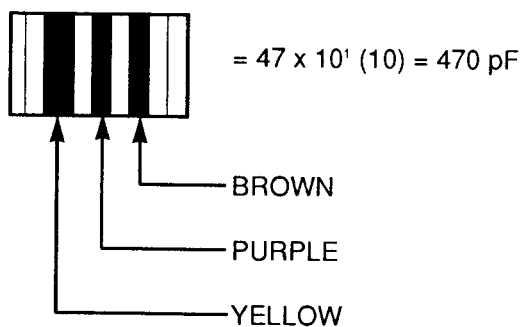
- * Capacitor
 - Pink : Rated Voltage (12V, 16V, 25V)
 - Yellowish Green : Rated Voltage (50V)
- * Resistor : Yellow

2) Standard M.E.L.F Chip Capacitor and Resistor Code

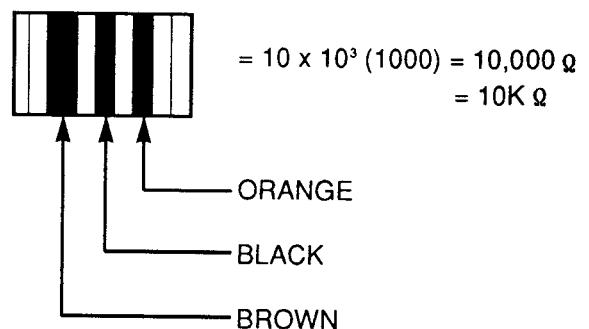
The capacitance and resistance can be indicated by three color. The 1st color band represents the first significant figure of the resistor's (capacitor's) value. Also, the 1st color band is the thickest. The 2nd color band represents the second significant figure of capacitor's value. The 3rd color band represents the multiplier.



* Capacitor



* Resistor



COLOR BAND	BROWN	RED	ORANGE	YELLOW	GREEN	BLUE	PURPLE	GRAY	WHITE	BLACK	GOLD	SILVER
1st AND 2nd NO	1	2	3	4	5	6	7	8	9	0	-	-
MULTIPLIER	10^1	10^2	10^3	10^4	-	-	-	-	-	10^0	10^{-1}	10^{-2}

TABLE - 1

1-6. CLEANING AND LUBRICATION

1-6-1. CLEANING TAPE MECHANISM

Periodic cleaning is necessary to insure continued excellent performance of the tape mechanism. To clean the following parts, patch and solvent are available.

1. Capstan shaft.
2. All idler wheels.
3. All tape guide posts.
4. Supply and take-up reels.
5. Pinch roller.
6. Capstan belt.
7. Capstan motor pulley.

1-6-2. CLEANING OF ROTATING AND STATIONARY HEADS

To clean video heads, full erase head, audio/control (A/C) head, use only head cleaning kit and solvent.

Note: When cleaning video heads move the cleaning stick in the direction of head rotation. Wiping in a vertical direction may damage the heads.

Press a chamois cloth which has been dipped in cleaning fluid lightly against the rotating cylinder assembly, then do the cleaning by slowly rotating upper cylinder ass'y by hand.

Note: Never try to clean by using the motor to turn it.

1-6-3. LUBRICATION TAPE MECHANISM

The tape transport mechanism is properly lubricated at the factory. In normal use cycles, and with average environmental conditions, additional lubrication should not be required during the first year of operation.

Depending on the frequency of use and environmental conditions, periodic lubrication may be required. When relubricating, remove old lubricant first, then sparingly apply new lubricant. (Excessive lubricant may be transferred to other assemblies causing malfunction.)

Use grease on the following parts every 1,000 hours of operations. (See exploded view for location.)

1. Between base pole assembly (L,R) and main base.
2. Gear master
3. Gear E/J drive
4. Gear L/D "L,R"
5. Base pole edge
6. Slide main brake
7. Pinch drive unit
8. Gear escalator
9. Lever shaft
10. Tension arm ass'y cam
11. Lever tension control
12. Gear review
13. I.B slide ass'y

Oil may be required for the following parts after 1,000 hours of operation. (See exploded view for location.)

Main base

1. Arm tension mould
2. Shaft reel disk "L, R" mould
3. Shaft gear worm

Other parts which are not listed above do not be required lubrication, except when parts are replaced. Use appropriate oil or grease as indicated on exploded view.

1-7. ABBREVIATIONS

2X : Double
4.43MHz : Color Sub Carrier

ACC : Automatic Color Circuit
ACK : Automatic Color Killer
ADD : Adder
AFC : Automatic Frequency Control
AFT : Automatic Fine Tuning
AGC : Automatic Gain Control
ALC : Automatic Level Control
AMP : Amplifier
APC : Automatic Phase Control
AUX : Auxiliary

BATT : Battery
BD : Burst Deemphasis
BE : Burst Emphasis
BH : Power Supply for Selecting VHF High Band
BL : Power Supply for Selecting VHF Low Band
BPF : Band Pass Filter

C.FG : Capstan Frequency Generator
C.SYNC : Composite Sync
CAFC : Capstan Auto Frequency Control
CAPC : Capstan Auto Phase Control
CATV : Cable TV
CAR : Carrier
CAP : Capstan
CCD : Charge Coupled Device
CH : Channel
CHAR. : Character
CHROMA : Chrominance
CM : Capstan Motor
COMP : Comparator
CST : Cassette
C-ERR : Capstan Error
CTL : Control
C.PG : Capstan Pulse Generator
CUR.EMPH : Current Emphasis

D.FG : Drum Frequency Generator
D.O.C : Drop Out Compensator
D.PG : Drum Pulse Generator
D/A : Digital-to-Analog
D/C : Dark/Clip
D.AFC : Drum Auto Frequency Control
D.APC : Drum Auto Phase Control

DE-EMPH : De-Emphasis
DET : Detector
DEV : Deviation
DLYD : Delayed
DM : Drum Motor
DEMODO : Demodulator
D.D : Direct Drive

E-E : Electronic-to Electronic
EMPH : Emphasis
ENV : Envelope
EQ : Equalizer
EPS : Easy Programming System

F.ADV : Frame Advance
F-V : Frequency to Voltage Converter
F.FWD : Fast Forward
FH : Frequency Horizontal
FG : Frequency Generator
FM : Frequency Modulator
FSC : Frequency Sub Carrier
FWD : Forward
FC : Frequency Center
FL : Frequency Low

GEN : Generator
GND : Ground

HPF : High Pass Filter

IF : Intermediate Frequency
IR : Infrared Receiver

LED : Light Emitting Diode
LIM : Limiter
LPF : Low Pass Filter
LUMA : Luminance
LCD : Liquid Crystal Display
LNR : Linear

MIX : Mixer
MM : Monostable Multivibrator
MTS : Multi Channel TV Sound
MEM : Memory
MFT : Manual Fine Tuning

N.C : No Connection

OSC : Oscillator
OTR : One Touch Recording
OSP : On Screen Programme
OSD : On Screen Display

TP : Test Point
TRK : Tracking

UL : Unloading

PB : Play Back
P.C : Power Control
PG : Pulse Generator
PIF : Picture Intermediate Frequency
PLL : Phase Lock Loop
PRG : Programme
PWM : Pulse Width Modulation
PWR : Power
P/S : Pause/Still
PD : Power Detector

VT : Voltage Tuning
VLP : Vertical Lock Pulse
V-REF : Voltage Reference
V-SYNC : Vertical Sync
VCO : Voltage Controlled Oscillator
VCR : Video Cassette Recorder
VIF : Video Intermediate Frequency
VPS : Video Programming System
VHS : Video Home System
VXO : Voltage Controlled Crystal Oscillator
VSS : Voltage Super Source
VISS : VHS Index Search System

REG : Regulator
REC : Record
REC.SAF : Record Safety
REW : Rewind
RF : Radio Frequency
REV : Reverse
RECT : Rectifier
REF : Reference

W/C : White /Clip
W/D : White/Dark

Y/C : Luminance/Chrominance

SC : Simul-Cast
SC : Sub-Carrier
SCK : Shift Clock
SDA : Serial Data
SIF : Sound Intermediate Frequency
SP : Standard Play
SW25Hz : Head Switching Pulse
SYNC : Synchronizing Signal
SYSCON : System Control
STB : Srobe
SI : Serial Input
SO : Serial Output
SW : Switch

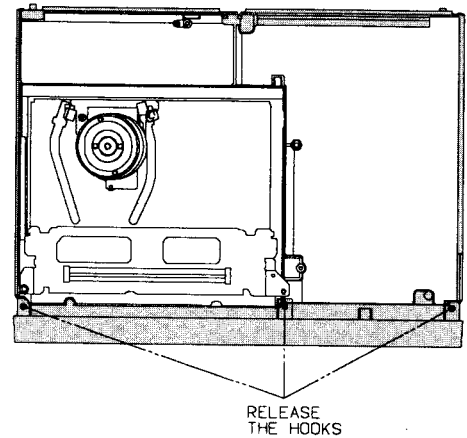
uP : Microprocessor

2. DISASSEMBLY

2-1. INSTRUMENT DISASSEMBLY

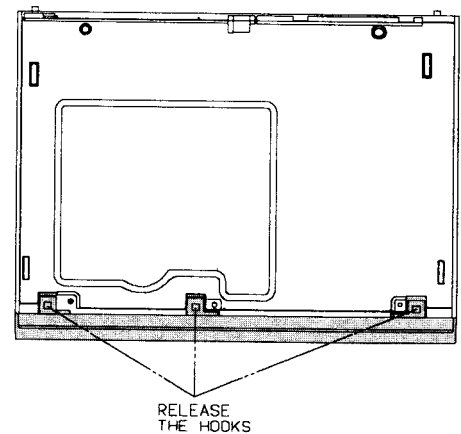
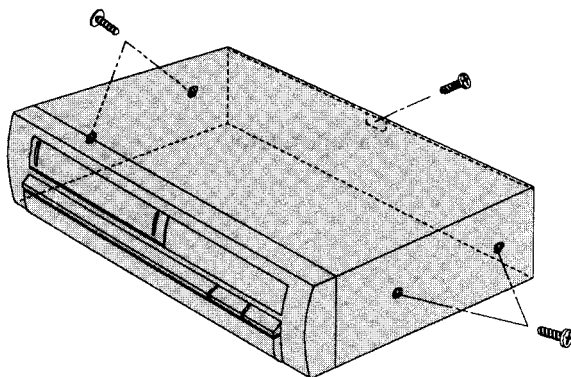
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in reverse order.

2-1-3. Front Panel Removal



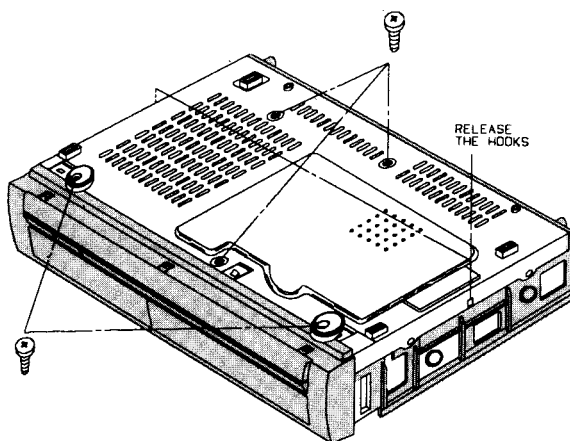
(Top View)

2-1-1. Top Cabinet Removal



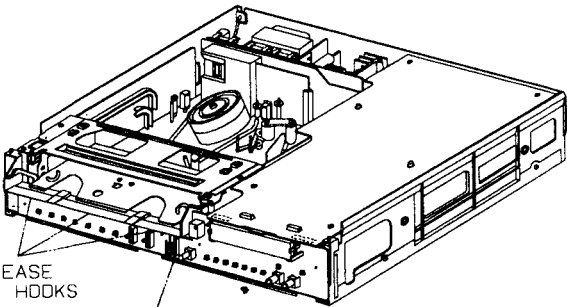
(Bottom View)

2-1-2. Bottom Cover Removal



2-2. CIRCUIT BOARD DISASSEMBLY

2-2-1. Function Circuit Board Removal

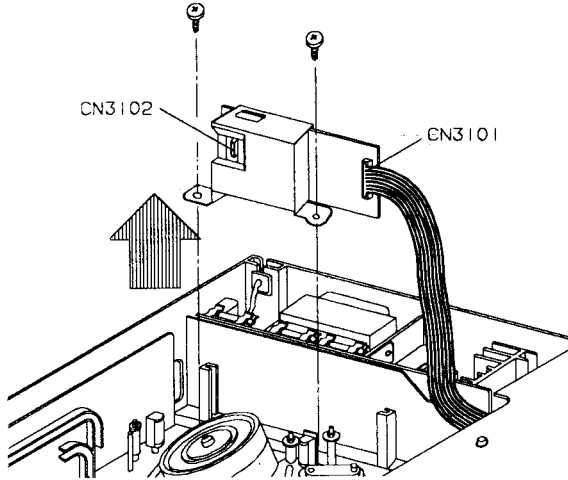


RELEASE THE HOOKS

CN703

This diagram shows the function circuit board being lifted out of the main chassis. A label 'RELEASE THE HOOKS' points to the front edge of the board, and 'CN703' points to a connector on the board's edge.

2-2-4. Pre-Amp Circuit Board Removal

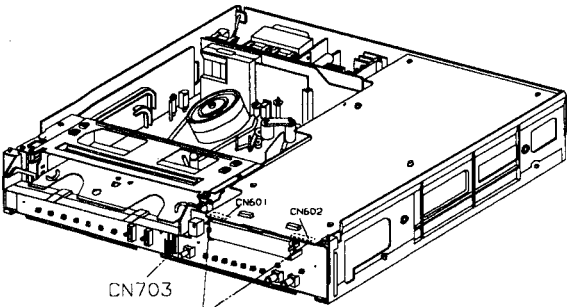


CN3102

CN3101

This diagram illustrates the removal of the pre-amp circuit board. It shows the board being lifted away from the chassis, with a cable connected to connector 'CN3101' on the board and another connector 'CN3102' visible on the chassis.

2-2-2. Timer Circuit Board Removal



CN601

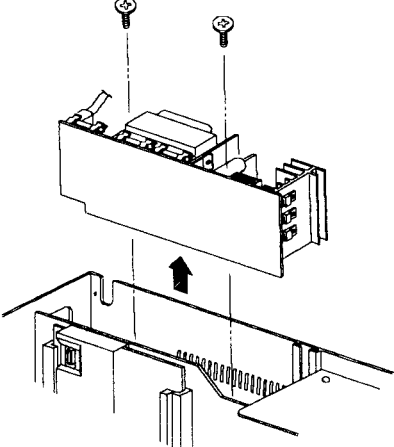
CN602

CN703

RELEASE THE HOOKS

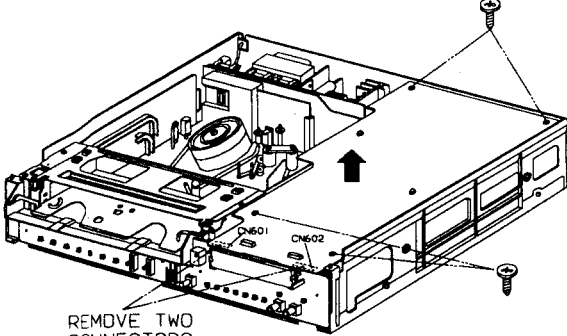
This diagram shows the timer circuit board being removed from the chassis. Labels 'CN601' and 'CN602' point to connectors on the board, 'CN703' points to a connector on the chassis, and 'RELEASE THE HOOKS' points to the front edge of the board.

2-2-5. Regulator Ass'y Removal



This diagram shows the regulator assembly being lifted out of the chassis. An upward arrow indicates the direction of removal.

2-2-3. Main Circuit Board Removal



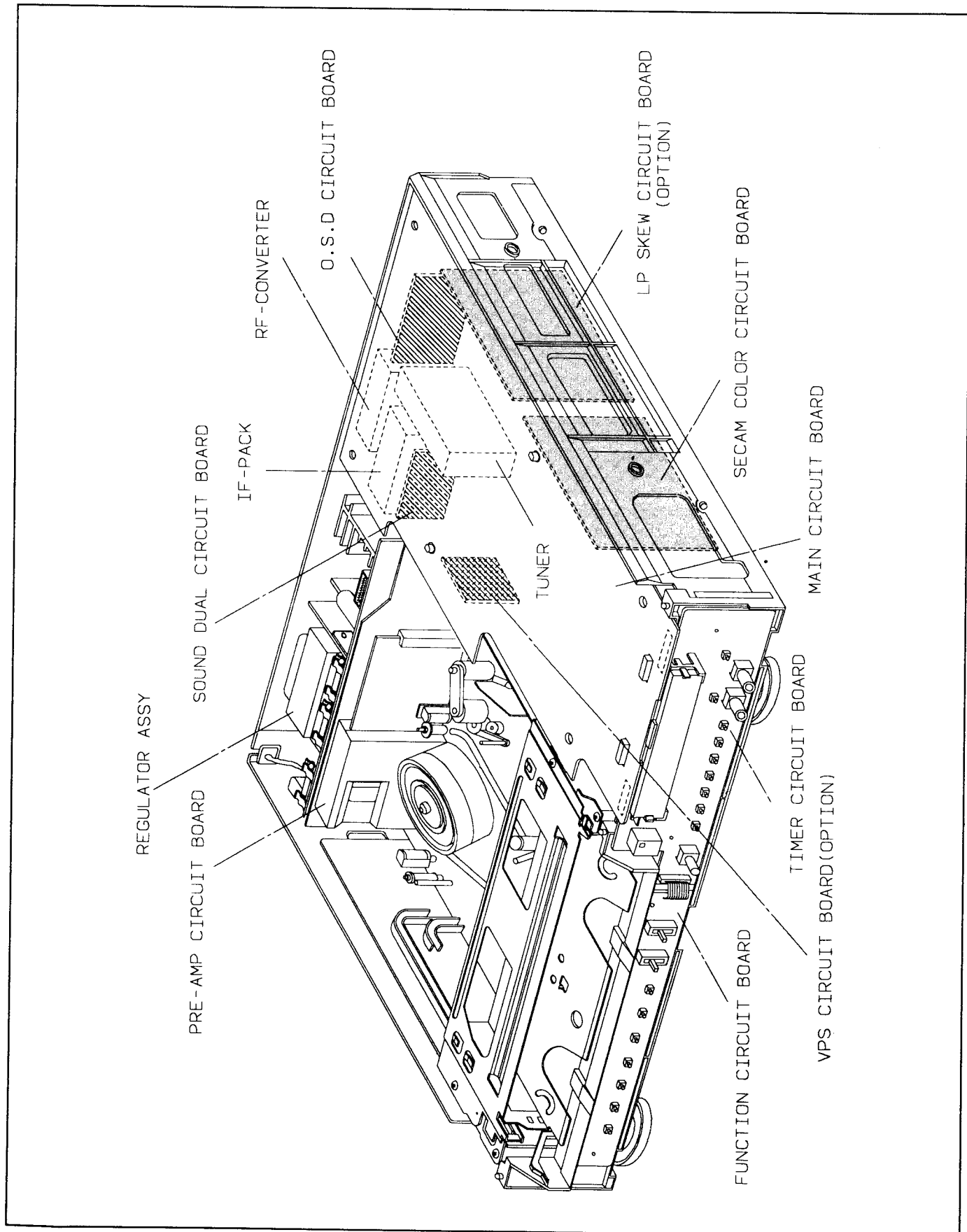
REMOVE TWO CONNECTORS

CN601

CN602

This diagram shows the main circuit board being removed from the chassis. An upward arrow indicates the direction of removal. Labels 'REMOVE TWO CONNECTORS' point to the front edge of the board, and 'CN601' and 'CN602' point to connectors on the board.

*** Circuit Boards Location**



2-3. TAPE TRANSPORT MECHANISM IDENTIFICATION

2-3-1. Top View

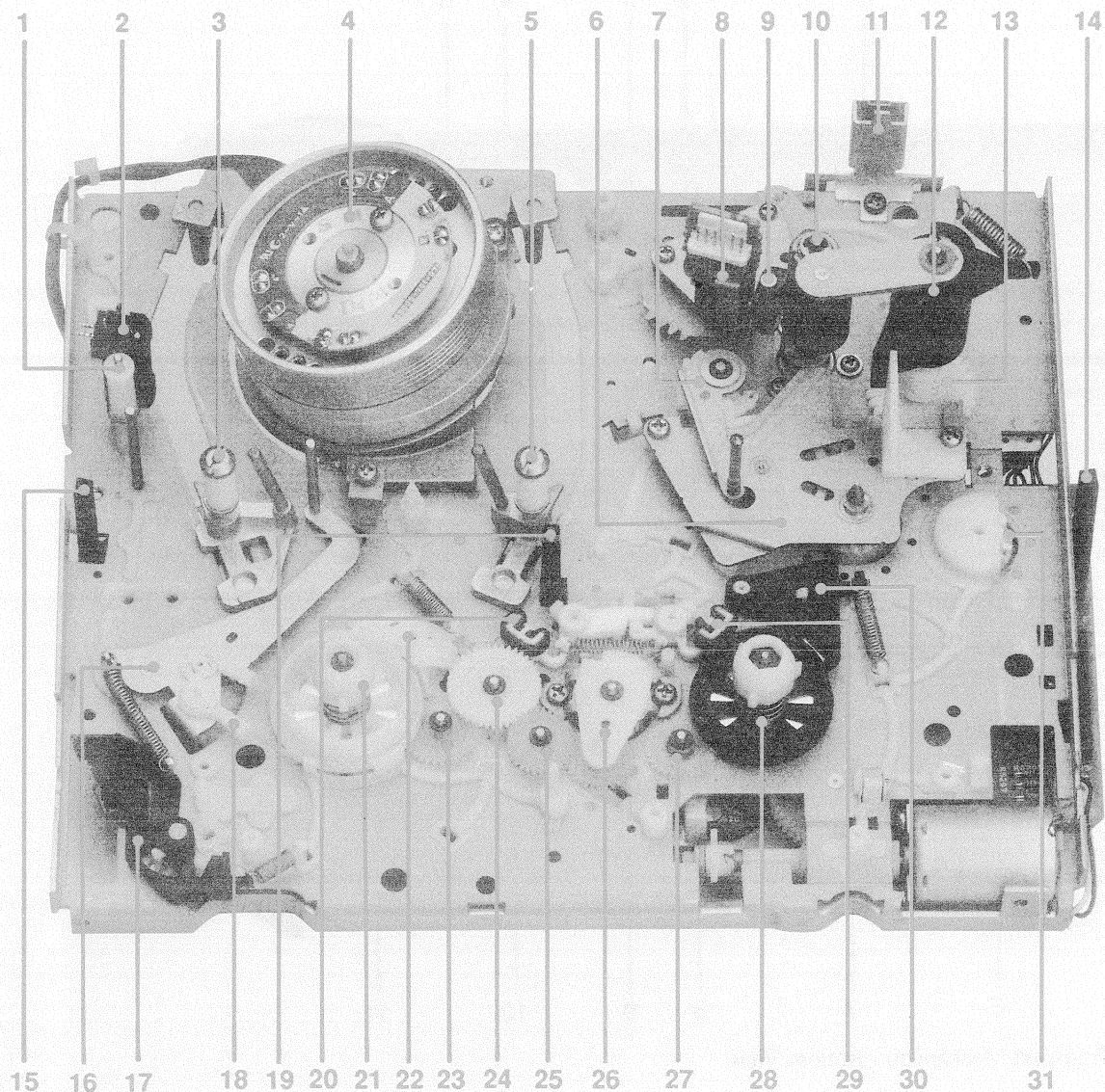


Fig. 1 Tape Transport Mechanism - Top View

- | | | |
|------------------------|------------------------|----------------------|
| 1. SUPPLY ROLLER | 14. START SENSOR | 27. GEAR RELAY "T" |
| 2. F/E HEAD | 15. END SENSOR | 28. REEL DISK "R" |
| 3. S-GUIDE ROLLER | 16. ARM TENSION ASS'Y | 29. BRAKE MAIN "R" |
| 4. CYLINDER ASS'Y | 17. LEVER REC S/W | 30. BRAKE SUB "R" |
| 5. T-GUIDE ROLLER | 18. BAND TENSION ASS'Y | 31. GEAR EJECT DRIVE |
| 6. DRIVE PINCH ASS'Y | 19. LED-IR | |
| 7. REVIEW ARM ASS'Y | 20. BRAKE MAIN "L" | |
| 8. ASS'Y A/C HEAD FULL | 21. REEL DISK "L" | |
| 9. TAPE GUIDE | 22. BRAKE SUB "L" | |
| 10. CAPSTAN SHAFT | 23. GEAR RELAY S3 | |
| 11. HOLDER TR | 24. GEAR RELAY S2 | |
| 12. PINCH ROLLER UNIT | 25. GEAR RELAY S1 | |
| 13. GEAR ESCALATOR | 26. IDLER SUB ASS'Y | |

2-3-2. Bottom View

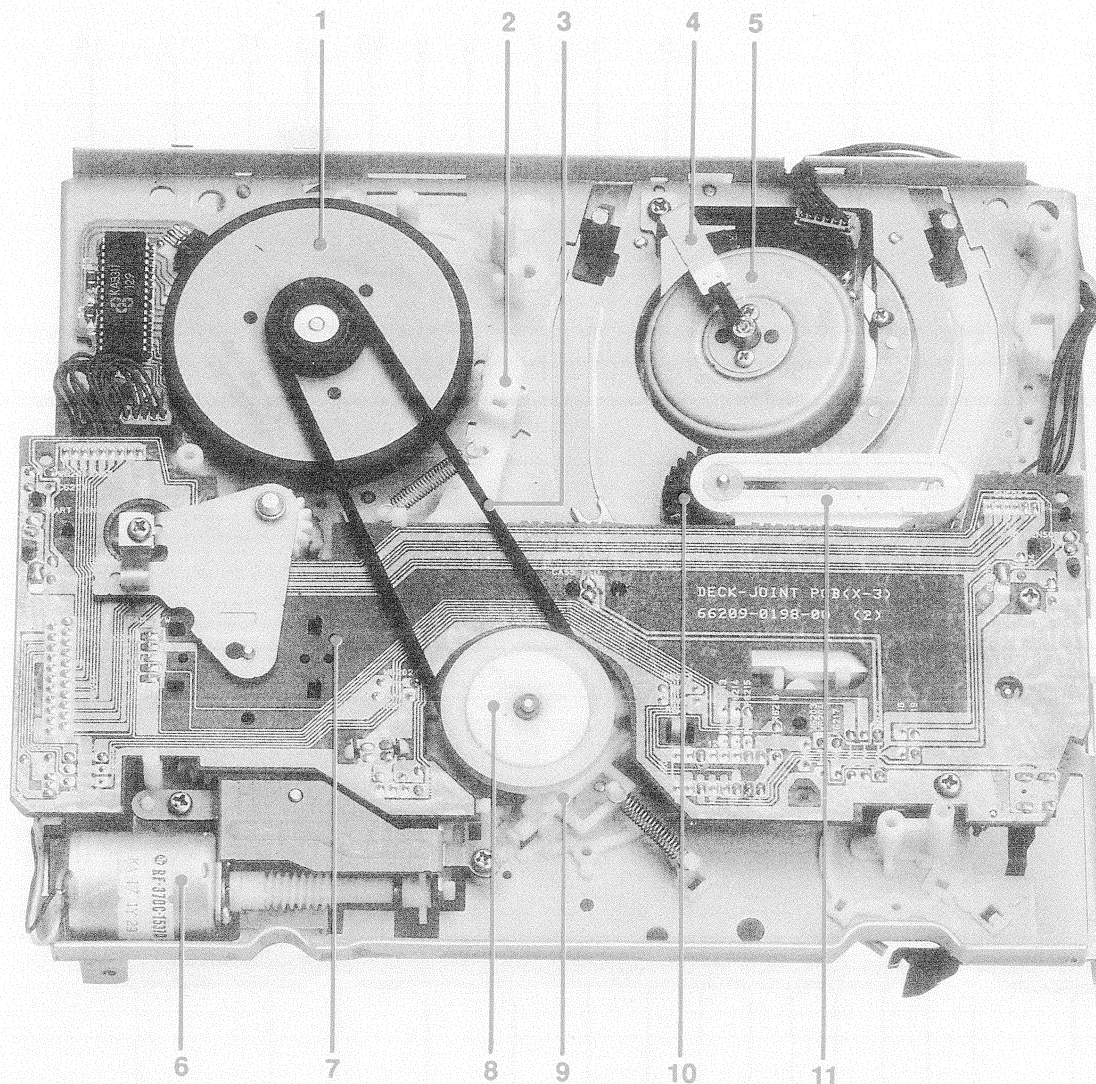


Fig. 2 Tape Transport Mechanism - Bottom View

- | | |
|----------------------|----------------------|
| 1. MOTOR D/D CAPSTAN | 7. DECK JOINT PCB |
| 2. BRAKE D/D CAPSTAN | 8. CLUTCH ASS'Y |
| 3. BELT CAPSTAN | 9. LEVER SHIFT |
| 4. HEAD BRUSH | 10. GEAR LOADING "R" |
| 5. CYLINDER MOTOR | 11. SLIDE MAIN |
| 6. L/D UNIT ASS'Y | |

2-4. HOUSING ASS'Y REMOVAL & REASSEMBLY

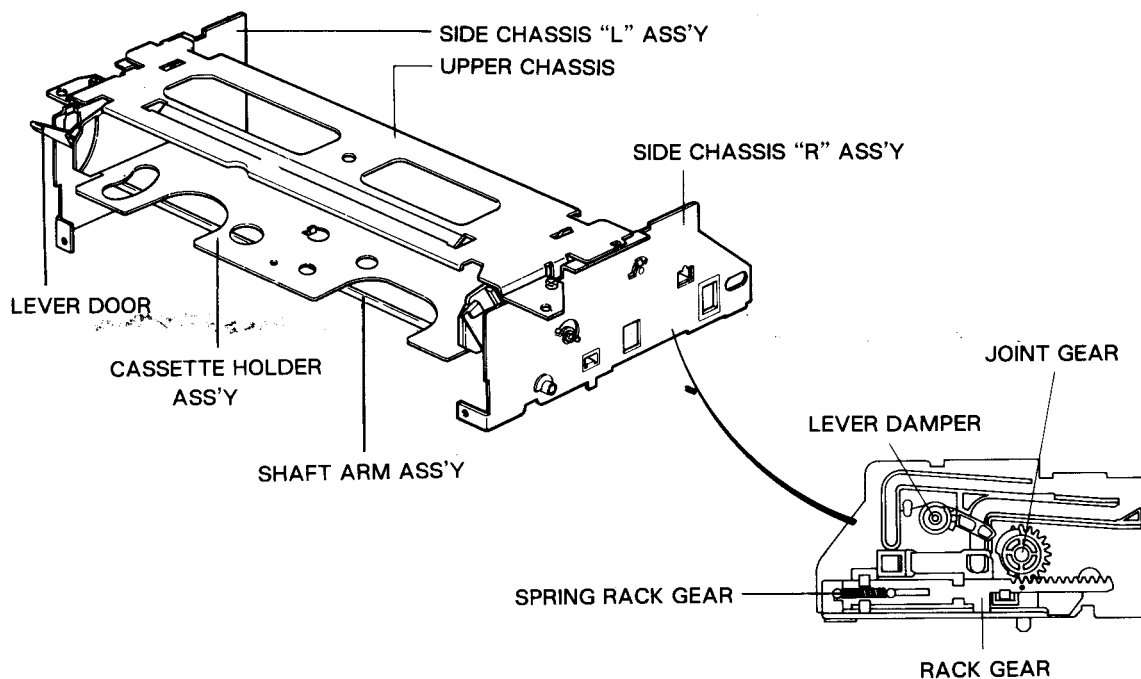


Fig. 3 Housing Ass'y Identification

2-4-1. Housing Ass'y Removal

1. Remove four (4) screws ①, ②.
2. Lift up the housing ass'y in the direction of arrow.

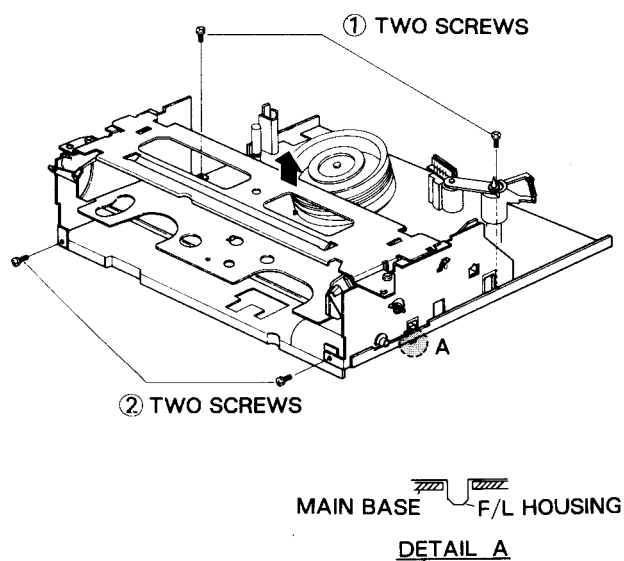


Fig. 4 Housing Ass'y Removal

2-4-2. Upper Chassis & Cassette Holder Ass'y Removal

1. Remove two (2) screws ①.
2. Lift up the upper chassis ② and the cassette holder ass'y ③ in the direction of arrow.

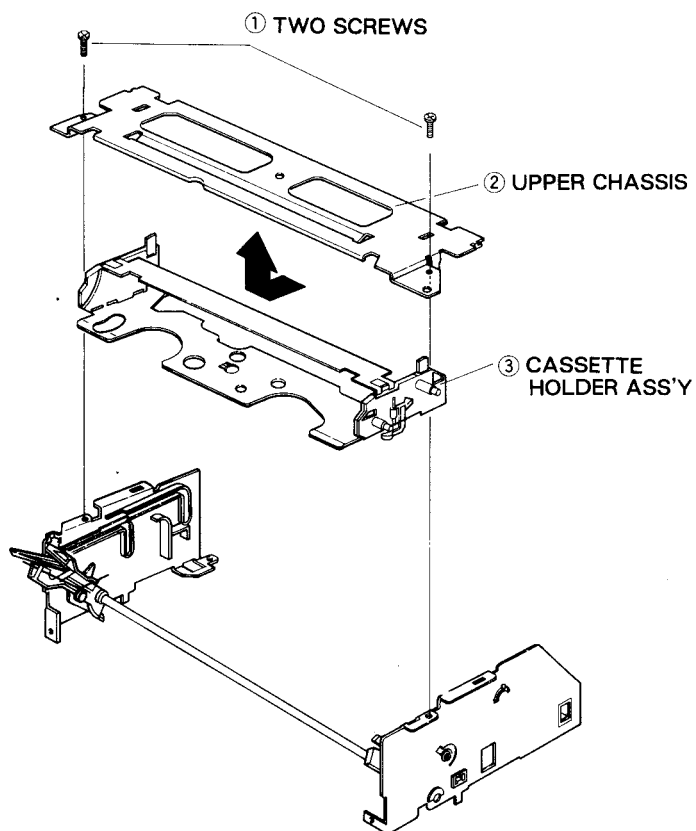


Fig. 5 Upper Chassis & Cassette Holder Ass'y Removal

2-4-3. Side Chassis "L", "R" Ass'y Removal

1. Remove the side chassis "L" ass'y ② from shaft arm ass'y ① in the direction of arrow (A).

2. Remove the side chassis "R" ass'y ③ from shaft arm ass'y ① in the direction of arrow (B).

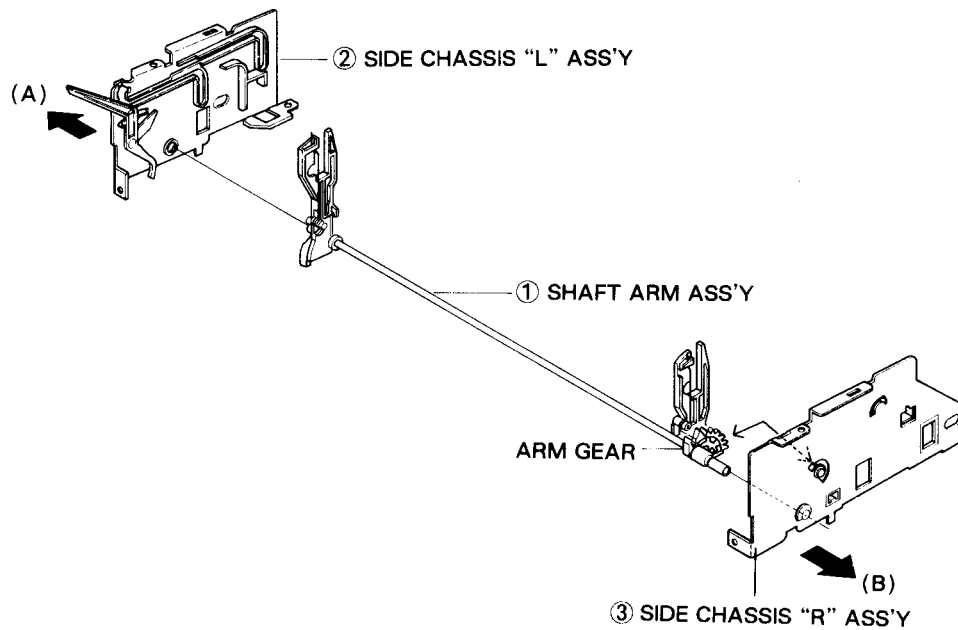


Fig. 6 Side Chassis "L", "R" Ass'y Removal

2-4-4. Rack Gear & Joint Gear Removal

1. Push the rack gear ① in the direction of arrow (A) to the end.

2. Remove one screw ② and then the joint gear ③.
3. Remove the rack gear ① toward arrow (B).

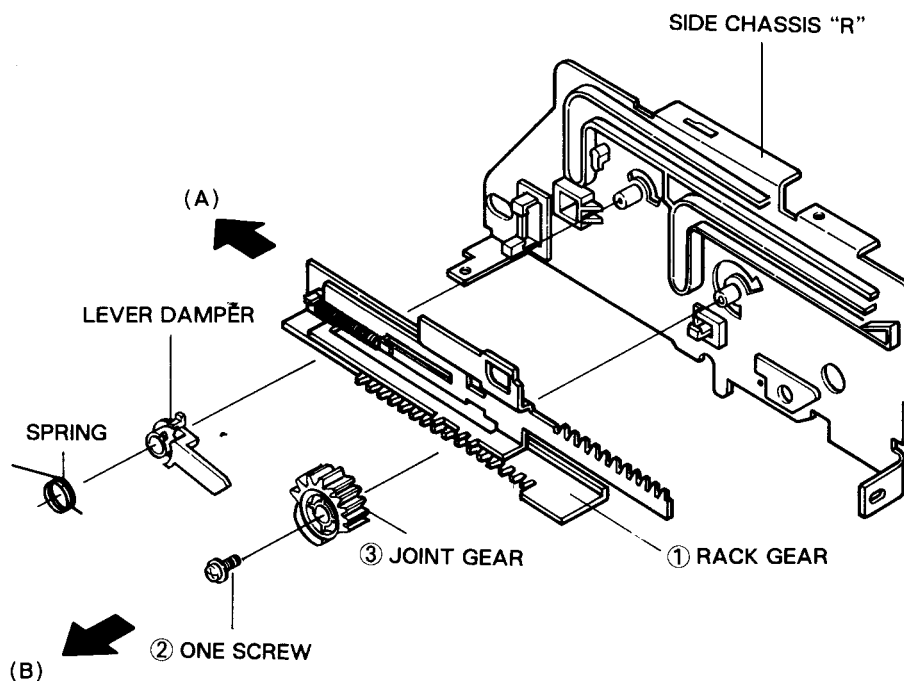


Fig. 7 Rack Gear & Joint Gear Removal

2-4-5. Reinstallation of Rack Gear and Joint Gear

Reinstallation and Timing of Rack Gear and Joint Gear

1. Pull the rack gear ① in the direction of arrow to the end.
2. Install the joint gear so that the slot #1 of joint gear ② is aligned with the tooth #1 of rack gear ①.
(Refer to Fig. 8)

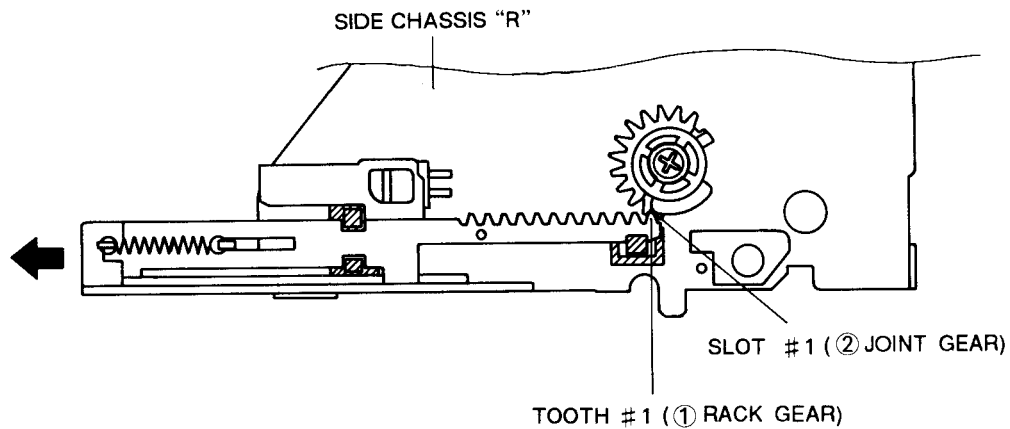


Fig. 8 Reinstallation and Timing of Rack Gear and Joint Gear

Timing Confirmation of Rack Gear and Joint Gear (Eject mode)

3. Push the rack gear ① in the direction of arrow to the end.
4. Make sure that the tooth #12 (Timing Point (B)) of joint gear ② and the Timing Point (A) of rack gear ① are aligned correctly as shown in Fig. 9.

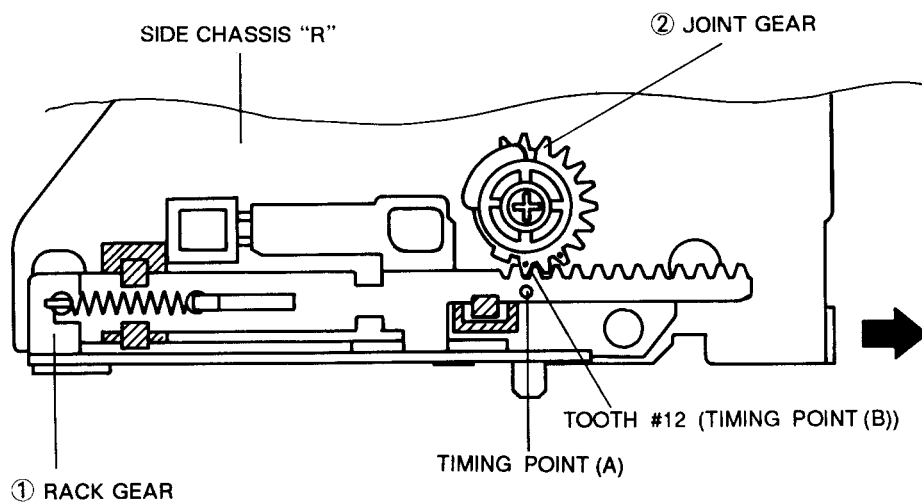


Fig. 9 Timing Confirmation of Rack Gear and Joint Gear

2-4-6. Reassembly of Joint Gear & Arm Gear

1. Install the arm gear ① so that the slot #1 (Timing Point (A)) of arm gear ① and the tooth #3 (Timing point (B)) of joint gear ② are aligned correctly as shown in Fig. 10.

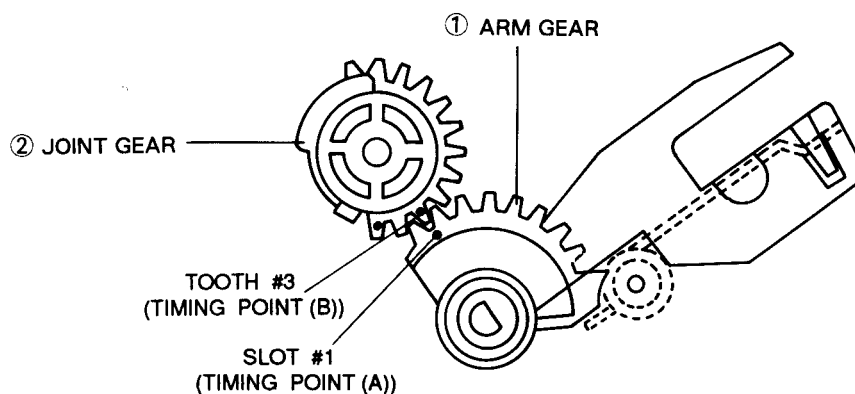


Fig. 10 Reassembly Joint Gear & Arm Gear

2-4-7. Reinstallation of Housing Ass'y

NOTE: Make sure deck is in the eject position.

1. Assemble the housing ass'y while pushing the rack gear forward to align the slot #1 of gear eject drive ② and the tooth #1 of rack gear ①. (Refer to Detail A)
2. Install housing ass'y and then tighten four (4) screws. (See Fig. 4)

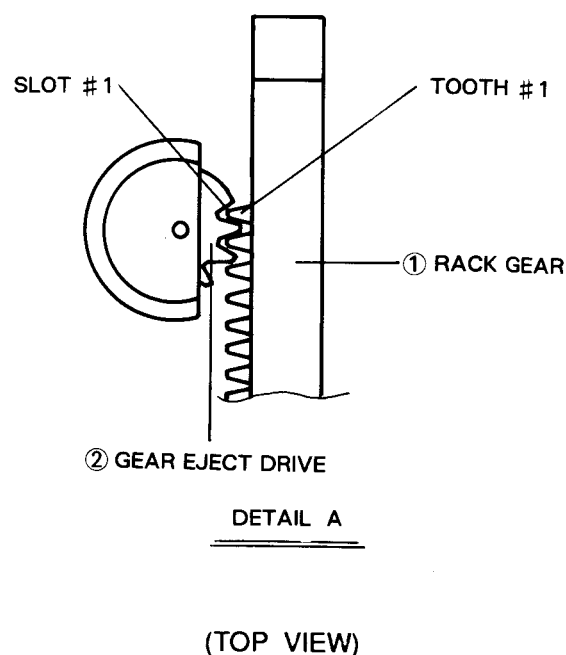
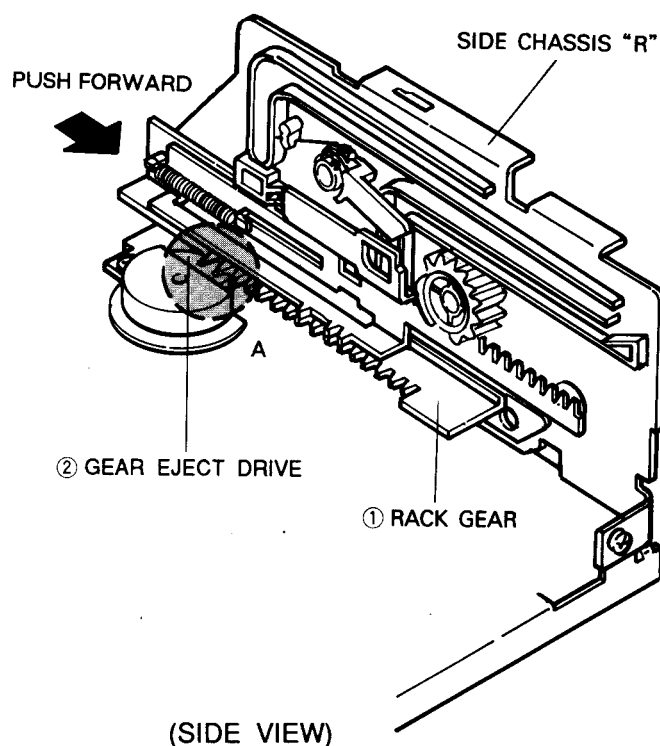
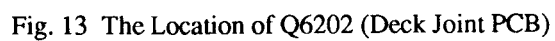


Fig. 11 Reinstallation of Housing Ass'y

1. Momentarily short Emitter and Base of Q6202 in the Deck Joint PCB to simulate tape loading.
2. All function will work in this mode.



2-5. CYLINDER ASS'Y REMOVAL & REASSEMBLY

2-5-1. Cylinder Ass'y Removal from Main Base

1. Release the F.P.C cable ① from pre-amp ass'y (CN3101) and disconnect the lead connector ass'y ② from the bottom cylinder PCB.
2. Remove three (3) screws ③ securing the base cylinder and the main base.
3. Lift the cylinder ass'y ④ in the direction of arrow.

CAUTION : Take extreme care when removing the cylinder ass'y. Do not touch the video head tips located on the upper cylinder during servicing.

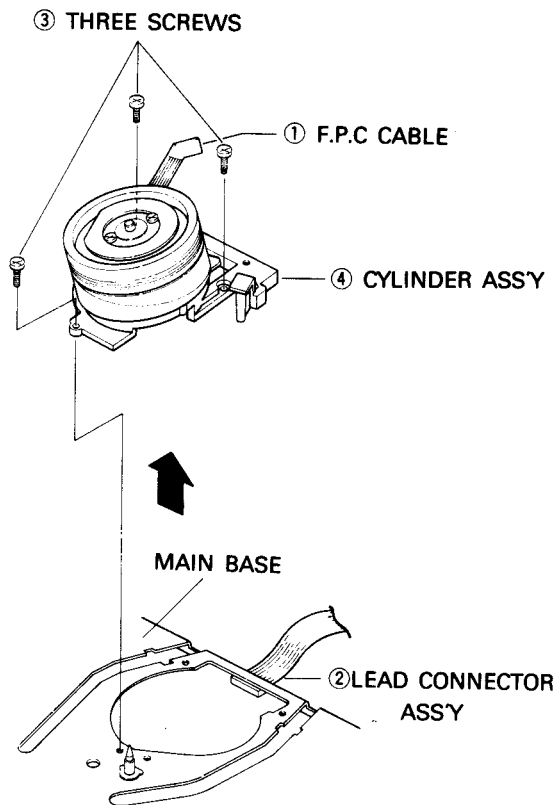


Fig. 14 Cylinder Ass'y Removal

2-5-2. Exploded View of Cylinder Ass'y

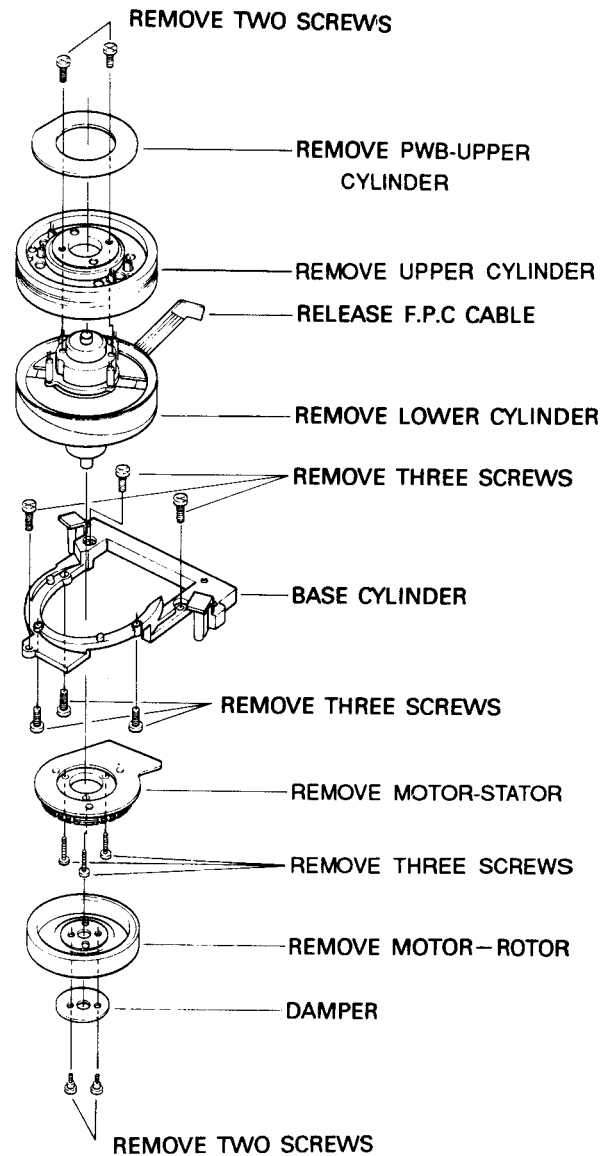


Fig. 15 Exploded View of Cylinder Ass'y

2-5-3. Upper Cylinder Ass'y Removal

1. Remove two (2) screws ① from the upper cylinder ass'y ③ and remove the upper cylinder ass'y ③ from the cylinder ass'y.
2. Unsolder the PWB-Upper cylinder ② from the upper cylinder ass'y ③. (See Fig. 17)

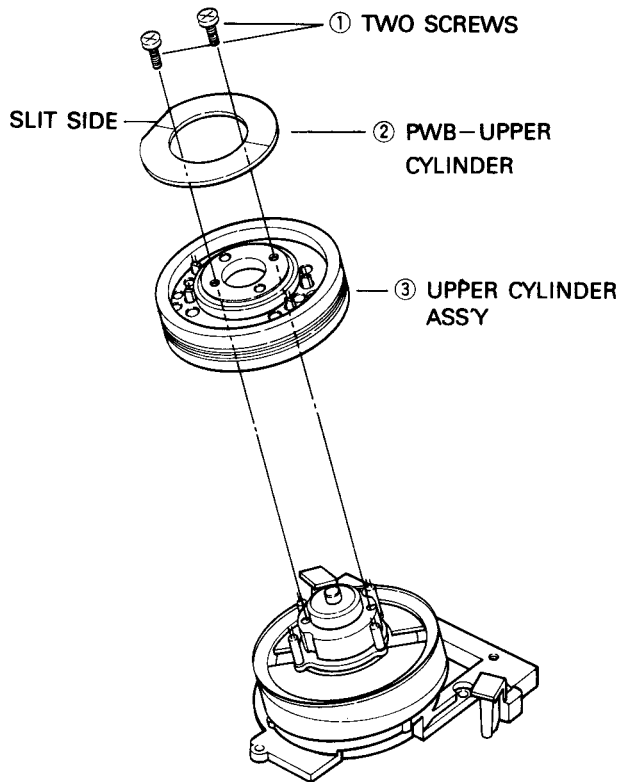


Fig. 16 Upper Cylinder Ass'y Removal

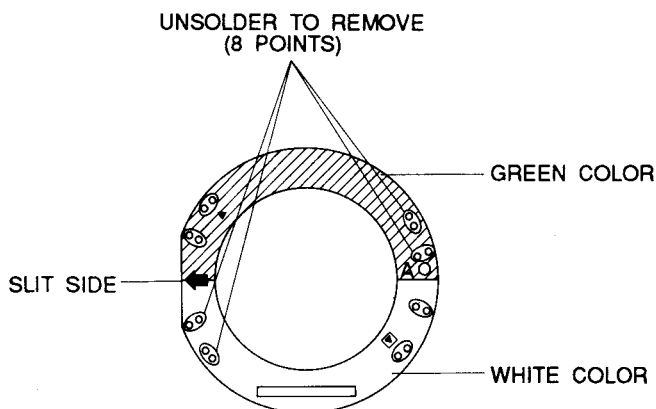


Fig. 17 PWB Upper Cylinder Top View

2-5-4. Lower Cylinder Ass'y Removal

1. Remove three (3) screws ① from the base cylinder ②.
2. Lift up the lower cylinder ass'y ③ from the base cylinder ②.

NOTE : Align two (2) base cylinder pin before reinstalling.

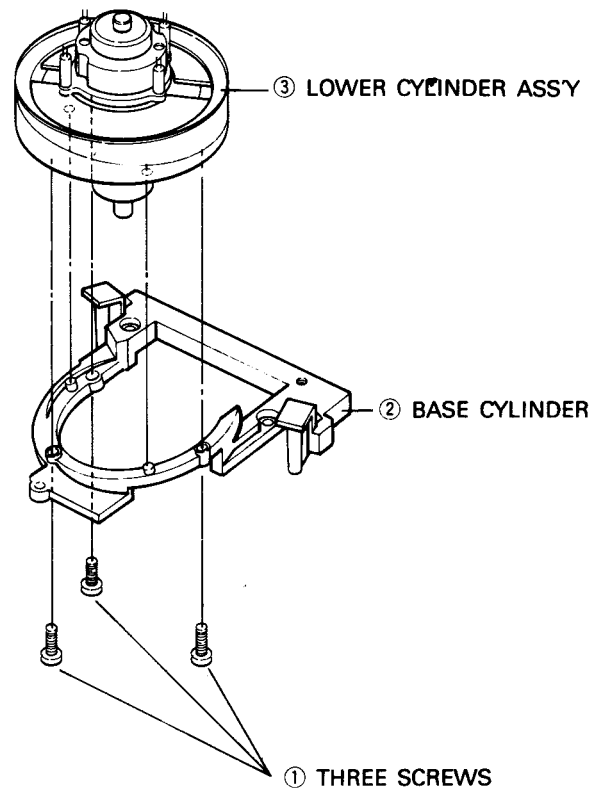


Fig. 18 Lower Cylinder Ass'y Removal

2-5-5. Cylinder Motor Removal

1. Remove two (2) screws ① from the damper ②, then remove the damper ② and the motor-rotor ③.
2. Remove three (3) screws ④ from the motor-stator ⑤ and take it out.

NOTE : Mark rotor position to insure correct phase orientation upon reinstallation.

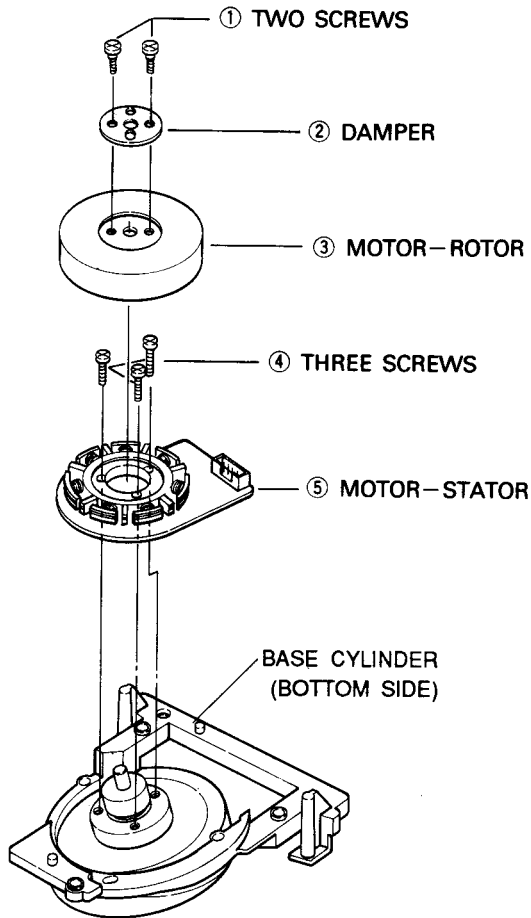


Fig. 19 Cylinder Motor Removal

2-5-6. Assembly of Lower Cylinder

1. Secure with three (3) screws to the motor-stator. (Refer to Fig. 19)
2. Reinstall the motor-rotor, damper and secure with two (2) screws. (Refer to Fig. 19)

NOTE : make sure that the hole of bush cylinder on lower cylinder and the hole of motor rotor are aligned correctly as shown in Fig. 20.

3. Reinstall the lower cylinder to the base cylinder and secure with three (3) screws.

NOTE : Align two (2) base cylinder pin before reinstall.

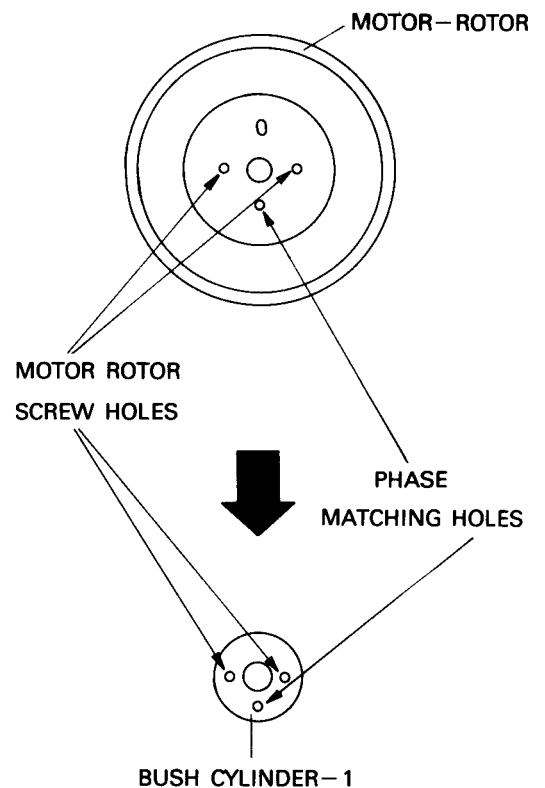


Fig. 20 Bush Cylinder -1 & Motor Rotor Timing

2-5-7. Assembly of Upper Cylinder

1. When installing the upper cylinder, make sure green color (CH1) goes to CH1 head tip position on lower cylinder.
2. Tighten two (2) screws on the upper cylinder.
(Refer to Fig. 16)

NOTE : Timing of the upper cylinder PCB.

2-5-8. Assembly of Cylinder Ass'y

1. Reinstall cylinder ass'y on the main base.
2. Tighten three (3) screws securing the base cylinder and the main base.
3. Reconnect F.P.C cable to the pre-amp ass'y and the lead connector ass'y to the bottom cylinder PCB.

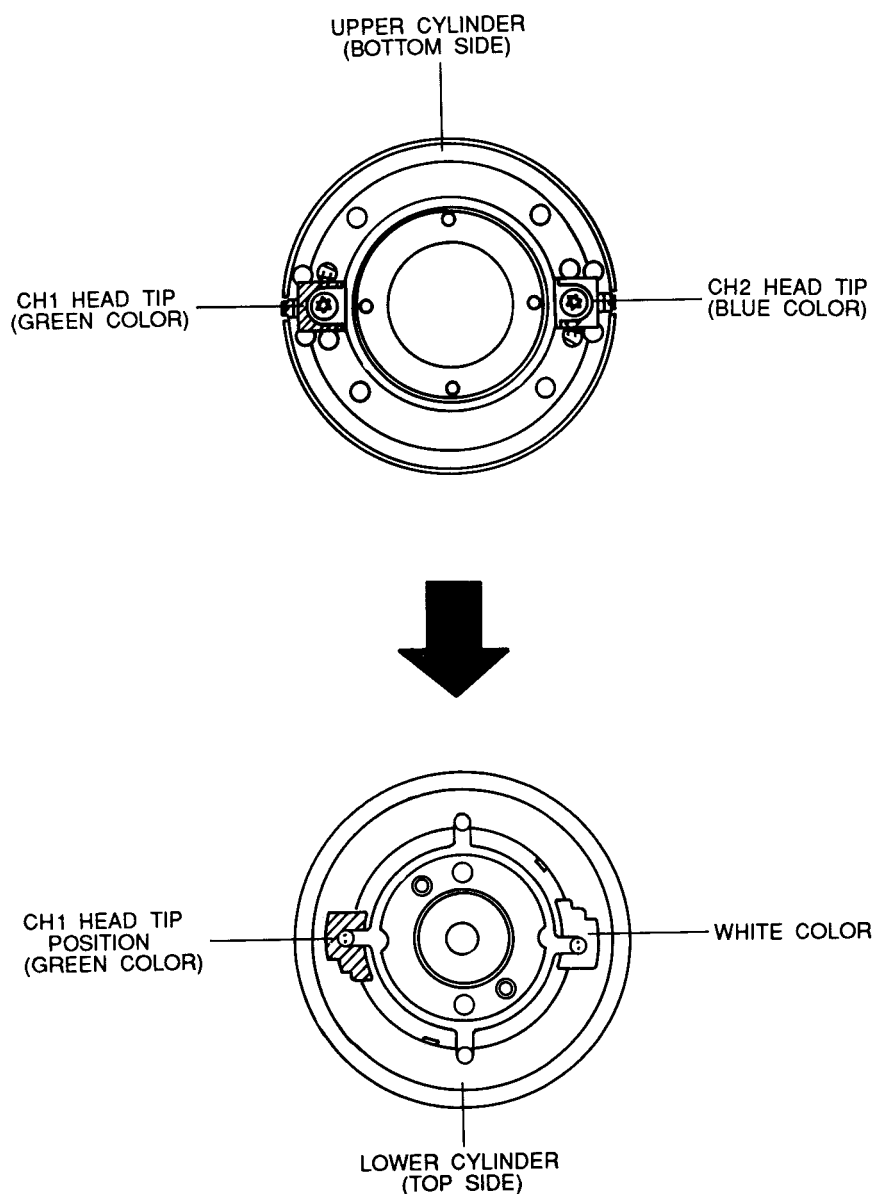


Fig. 21 Upper Cylinder Ass'y Timing

2-6. REEL DISK ASS'Y REMOVAL

2-6-1. Brake Sub "L" Removal

1. Remove the spring brake sub "L" ①.
2. Lift up the brake sub "L" ② pushing the clip brake sub "L" ③ in the direction of arrow.

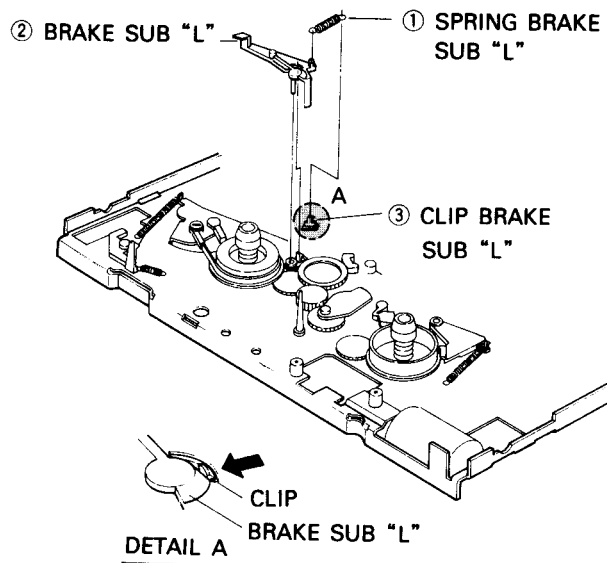


Fig. 22 Brake Sub "L" Removal

2-6-2. Gear Relay S2 & S3 Removal

1. Remove the washer slits ①.
2. Lift up the gear relay S2 ② and S3 ③.

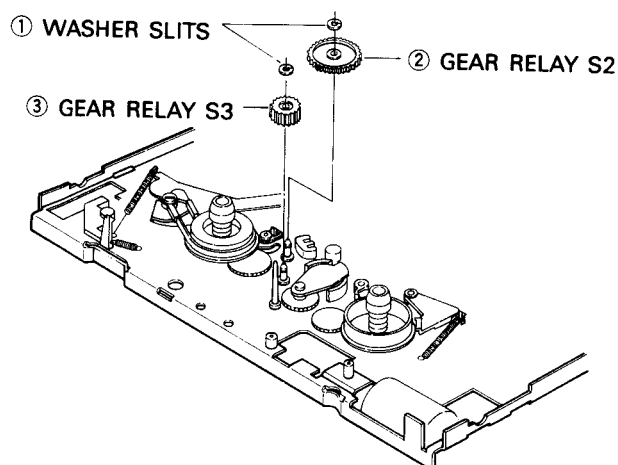


Fig. 23 Gear Relay S2 & S3 Removal

2-6-3. Full Arm Tension Ass'y Removal

1. Take off the spring tension ①.
2. Push the pin arm tension ② releasing the clip in the direction of arrow (Bottom View).
3. Lift up the full arm tension ass'y ③.

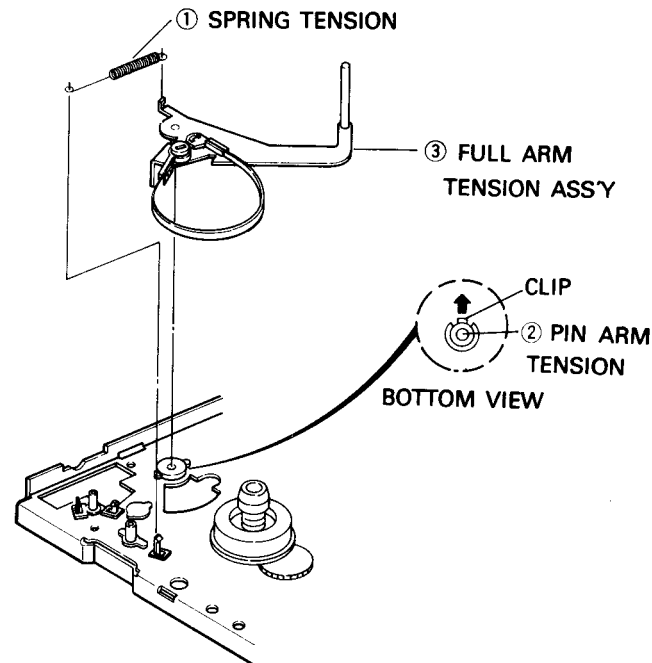


Fig. 24 Full Arm Tension Ass'y Removal

2-6-4. Reel Disk "L" Ass'y & Gear Relay S1 Removal

1. Remove the washer slit (A) ①.
2. Lift up the reel disk "L" ass'y ② and washer plain ③.
3. Remove the washer slit (B) ④.
4. Lift up the gear relay S1 ⑤.

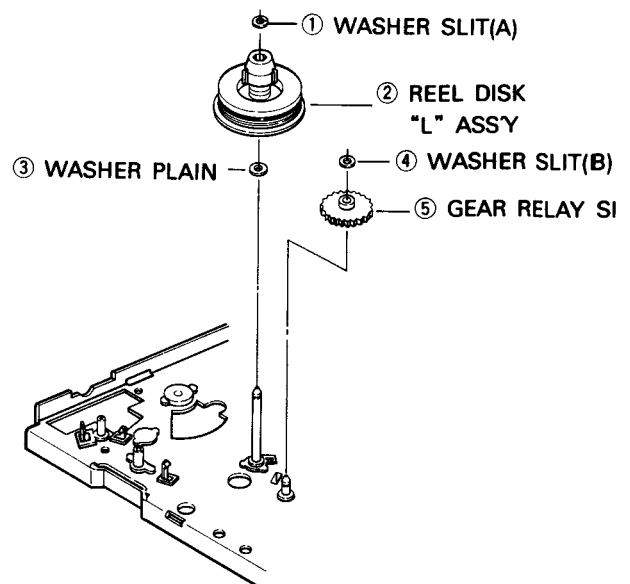


Fig. 25 Reel Disk "L" Ass'y & Gear Relay S1 Removal

2-6-5. Brake Sub "R" Ass'y Removal

1. Remove the spring brake sub "R" ①.
2. Lift up the brake sub "R" ass'y ② pushing the clip brake sub "R" ③ in the direction of arrow.

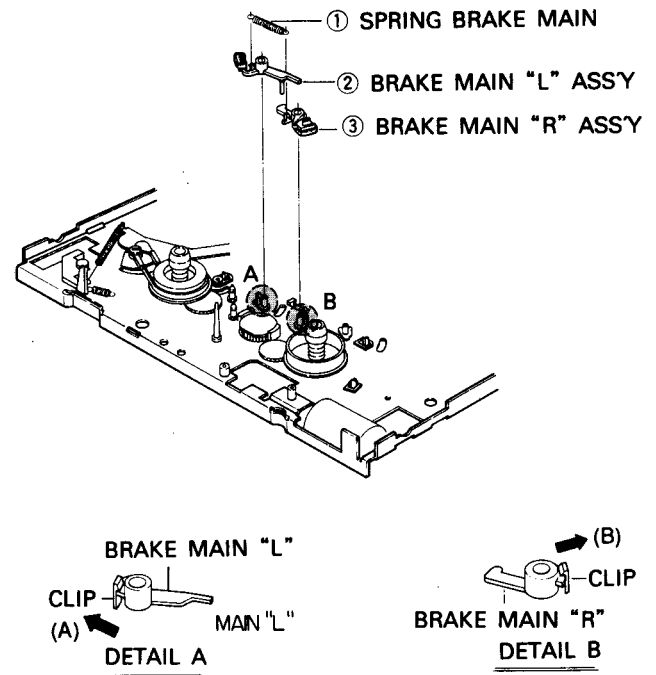
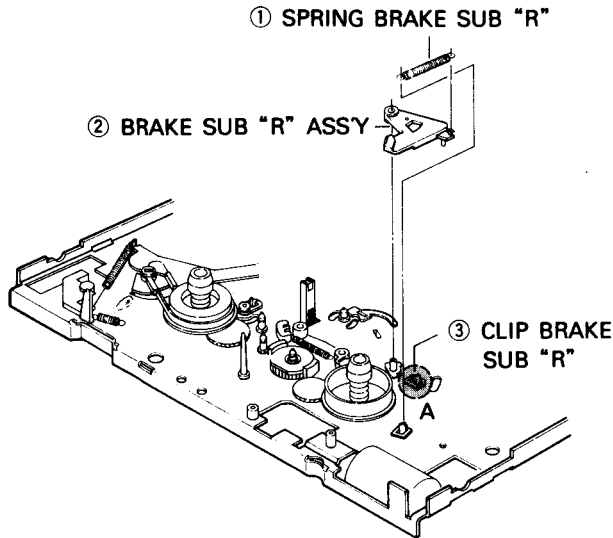


Fig. 27 Brake Main "L" & "R" Ass'y Removal

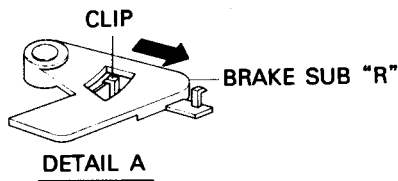


Fig. 26 Brake Sub "R" Ass'y Removal

2-6-6. Brake Main "L" & "R" Ass'y Removal (Fig. 27)

1. Remove the spring brake main ①.
2. Lift up the brake main "L" ass'y ② pushing the clip in the direction of arrow (A).
3. Lift up the brake main "R" ass'y ③ pushing the clip in the direction of arrow (B).

2-6-7. Reel Disk "R" Ass'y & Gear Relay "T" Removal (Fig. 28)

1. Remove the washer slit (A) ①.
2. Lift up the reel disk "R" ass'y ②.
3. Lift up the washer plain ③.
4. Remove the washer slit (B) ④.
5. Lift up the Gear Relay "T" ⑤.

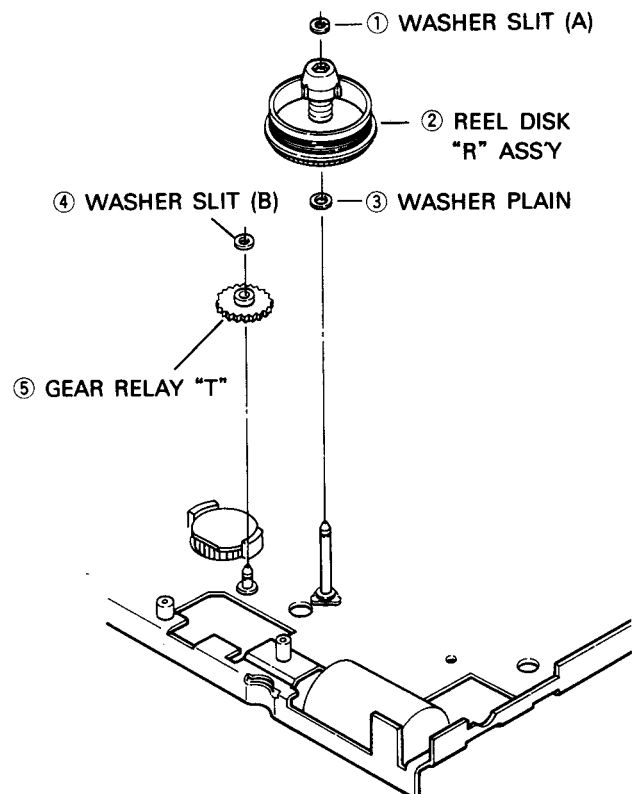


Fig. 28 Reel Disk "R" Ass'y & Gear Relay "T" Removal

2-6-8. Idler Sub Ass'y Removal

1. Remove the washer slit ①.
2. Lift up the idler sub ass'y ②.

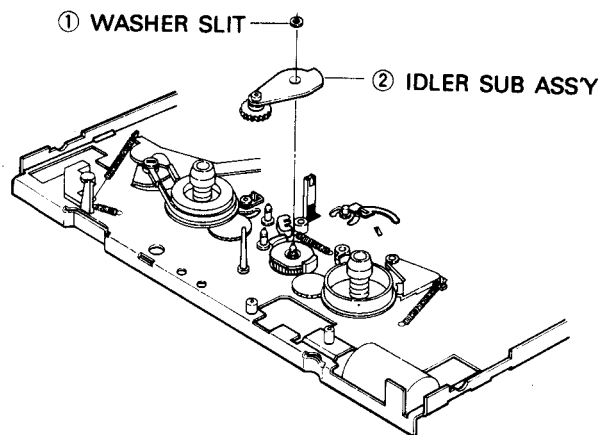


Fig. 29 Idler Sub Ass'y Removal

2-6-9. Lever REC S/W Removal

1. Remove the spring D/D capstan ①.
2. Lift up the lever REC S/W ② pushing the clip in the direction of arrow.

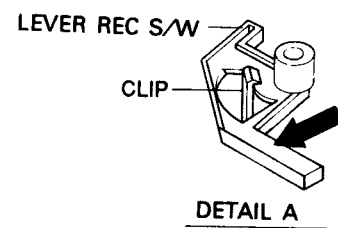
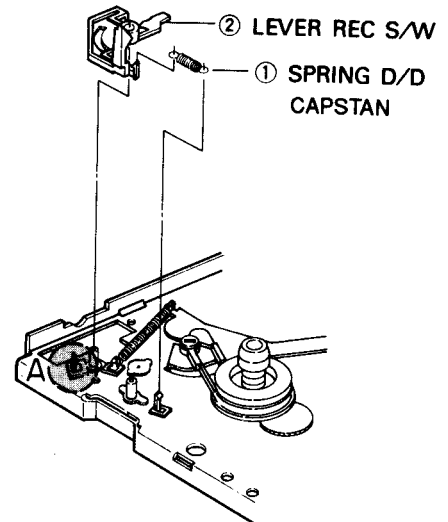


Fig. 30 Lever REC S/W Removal

2-7. LOADING & CAPSTAN MOTOR ASS'Y REMOVAL & REASSEMBLY

2-7-1. Belt Capstan Removal

1. Remove the belt capstan ①.

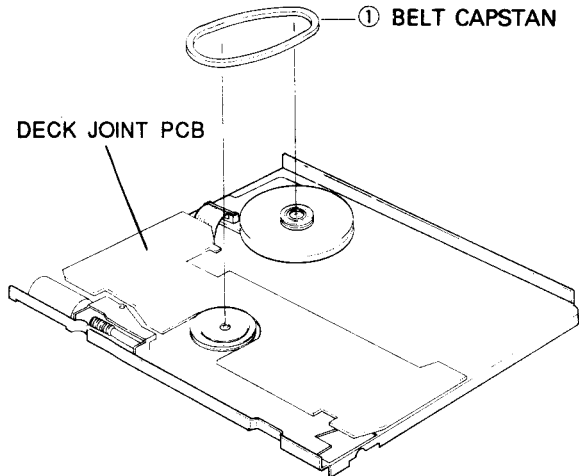


Fig. 31 Belt Capstan Removal

2-7-2. Motor D/D Capstan Removal

1. Remove the lead connector ass'y ① (Bottom Side).
2. Remove three (3) screws ② (Top Side).
3. Lift up the motor D/D capstan ③ (Bottom Side).

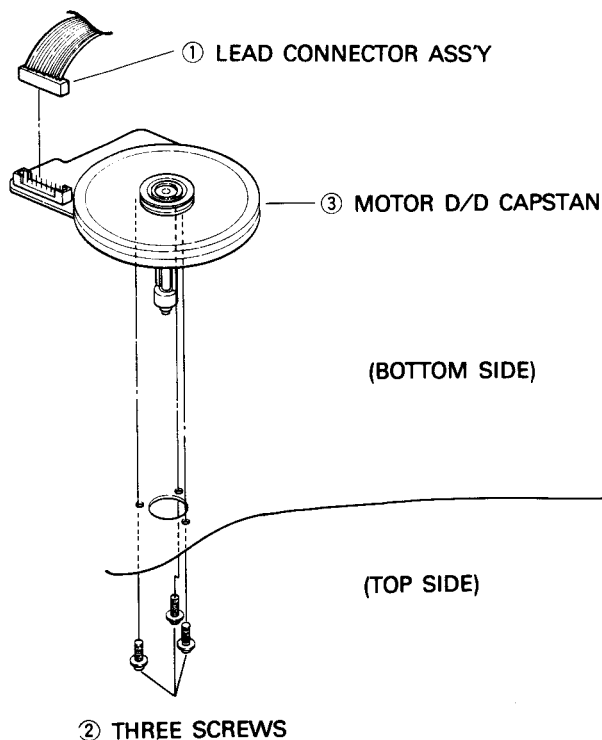


Fig. 32 Motor D/D Capstan Removal

2-7-3. Bracket Eject Drive & Deck Joint PCB Ass'y Removal

1. Remove three (3) screws ①, plate ground ② and the bracket eject drive ③.
2. Disconnect three (3) lead connectors ass'y ④, ⑤, ⑥ (CN6202, CN6203, CN6204) from each motor.
3. Release two (2) clips ⑦.
4. Lift up the deck joint PCB ⑧.

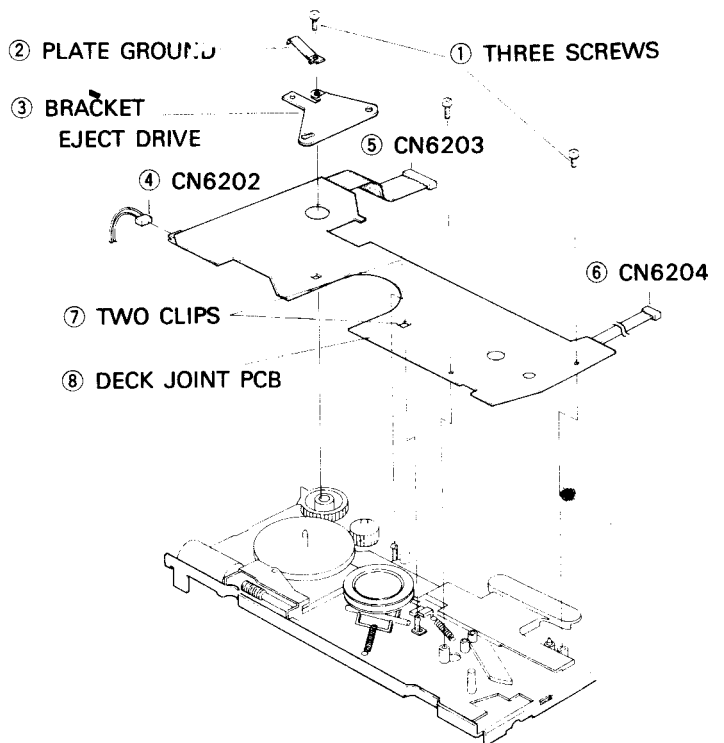


Fig. 33 Bracket Eject Drive & Deck Joint PCB Ass'y Removal

2-7-4. Clutch Ass'y Removal

1. Remove the washer slit ①.
2. Lift up the clutch ass'y ②.
3. Remove the washer plain ③.

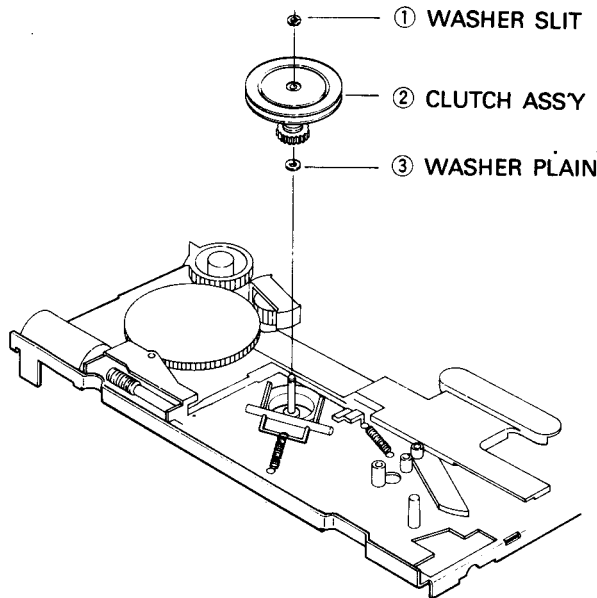


Fig. 34 Clutch Ass'y Removal

2-7-5. Gear Master & Gear Eject Drive Removal

1. Remove the gear master ① in the direction of arrow.
2. Lift up the gear eject drive ②.

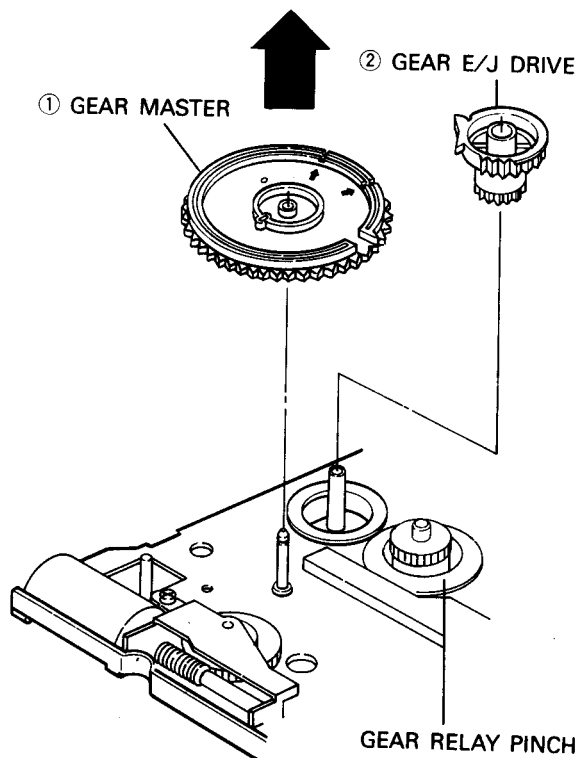


Fig. 35 Gear Master & Gear Eject Drive Removal

2-7-6. L/D Unit Ass'y & Gear Worm Wheel Removal

1. Disconnect the lead connector ① (CN6202) from deck joint PCB.
2. Remove two (2) screws ②.
3. Lift up the L/D unit ass'y ③.
4. Lift up the gear worm wheel ④.

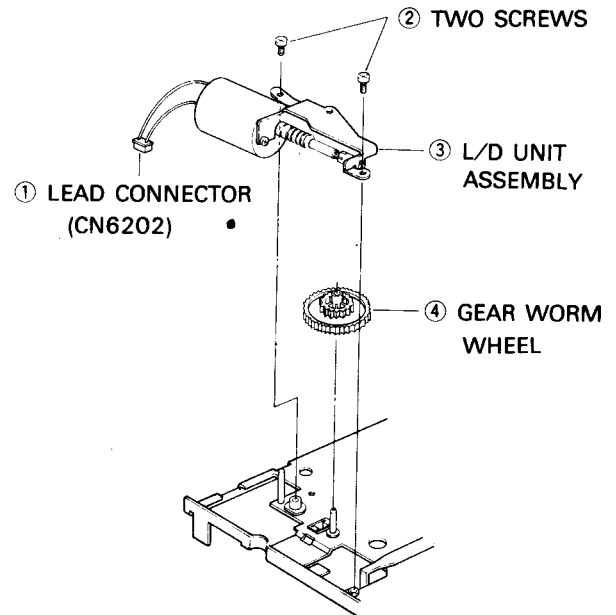


Fig. 36 L/D Unit Ass'y & Gear Worm Wheel Removal

2-7-7. Slide Main Removal

1. Remove the washer slit ①.
2. Release the clip ② holding the slide main ③ and then lift up the slide main ③.

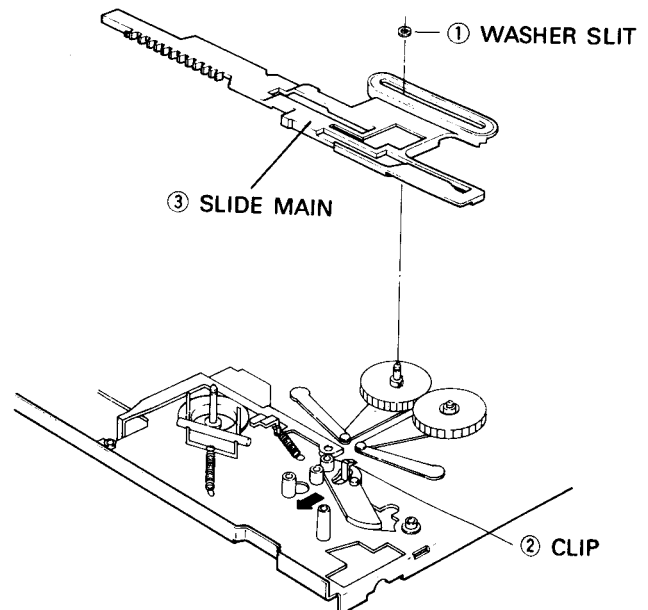


Fig. 37 Slide Main Removal

2-7-8. Brake D/D Capstan Ass'y Removal

1. Remove the S/P brake capstan ①.
2. Lift up the brake D/D capstan ass'y ③ pushing the clip ② in the direction of arrow.

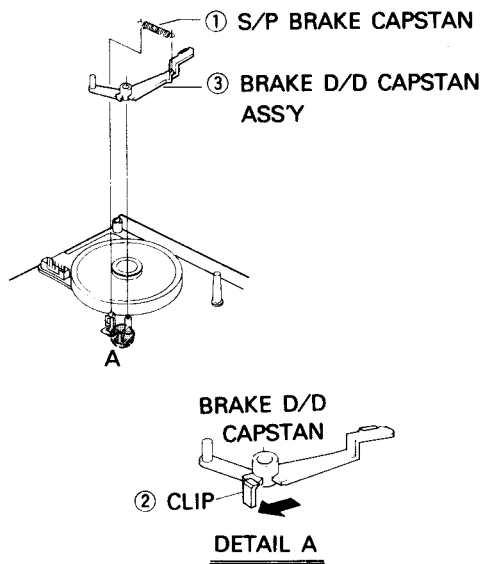


Fig. 38 Brake D/D Capstan Ass'y Removal

2-7-9. Slide I.B Ass'y Removal

1. Remove the S/P brake sub ①.
2. Lift up the slide I.B ass'y ② pushing the slide I.B ass'y ② to the end of the slot in the direction of arrow.

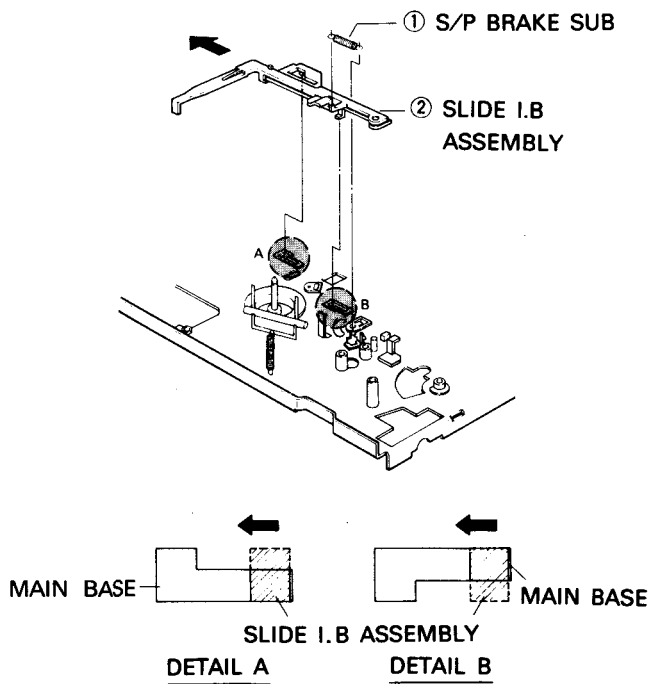


Fig. 39 Slide I.B Ass'y Removal

2-7-10. Lever Shift Removal

1. Remove the S/P lever shift ①.
2. Lift up the lever shift ② strongly.

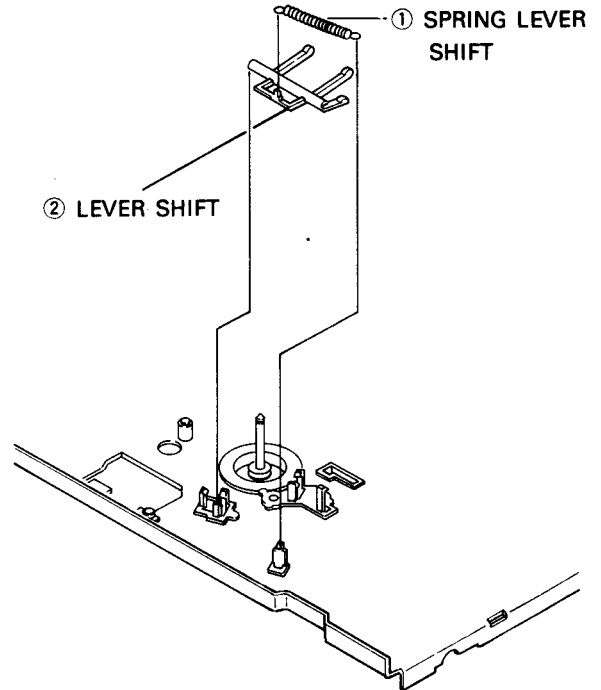


Fig. 40 Lever Shift Removal

2-7-11. Lever Tension Control Removal

1. Lift up the lever tension control ①.

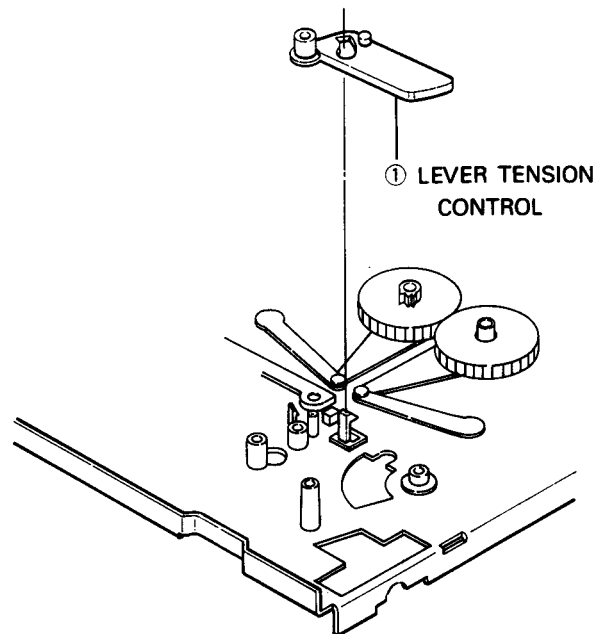


Fig. 41 Lever Tension Control Removal

2-7-12. Gear Loading "L", "R" Ass'y Removal

1. Lift up the gear loading "R" ass'y ①.
2. Lift up the gear loading "L" ass'y ③ pushing the gear loading "L" clip ② in the direction of arrow.

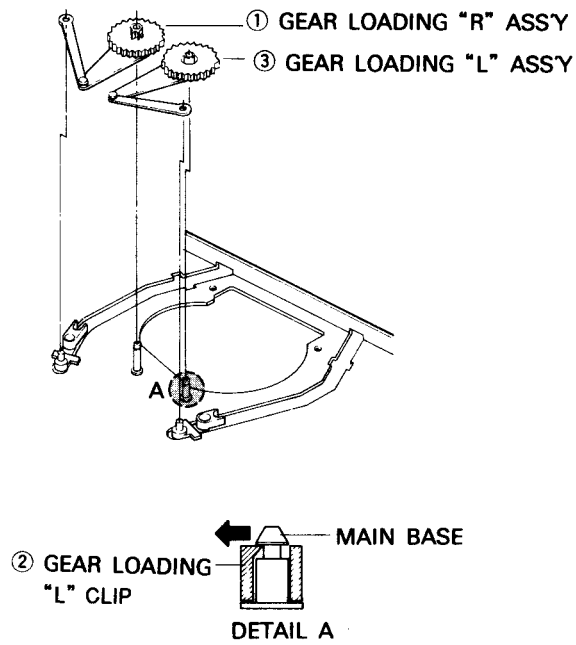


Fig. 42 Gear Loading "L", "R" Ass'y Removal

2-7-13. Review Arm Ass'y Removal

1. Remove the washer slit ①.
2. Lift up the full review arm ass'y ②.

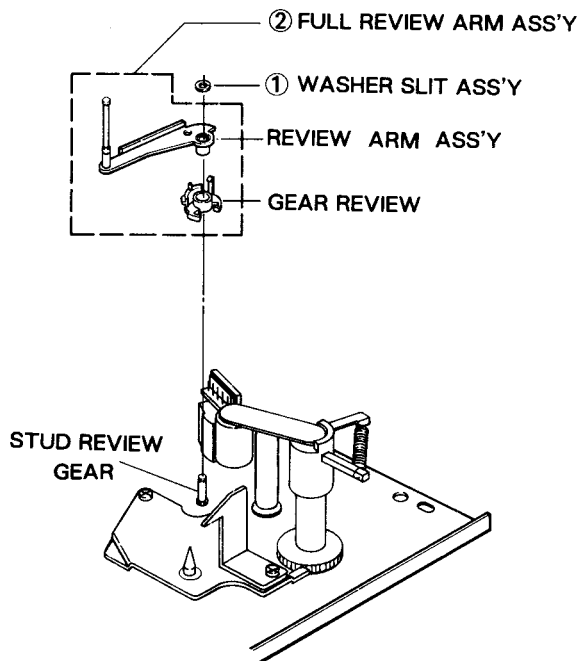


Fig. 43 Review Arm Ass'y Removal

2-7-14. Drive Cam Pinch Ass'y Removal

1. Remove two (2) screws ①.
2. Lift up the ass'y drive cam pinch ②.

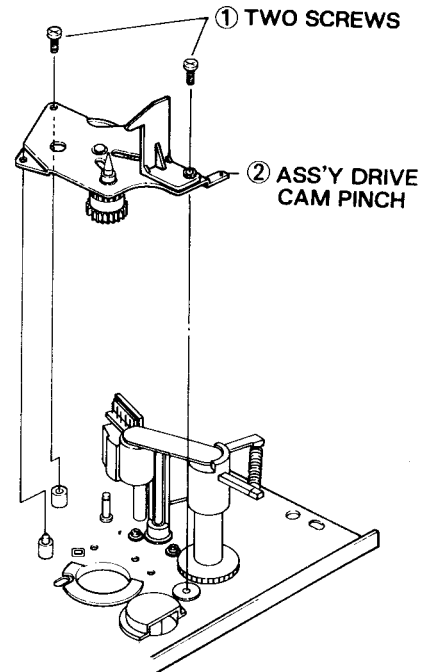


Fig. 44 Drive Cam Pinch Ass'y Removal

2-7-15. Pinch Roller Unit & Gear Escalator Removal

1. Remove the spring pinch roller ①.
2. Remove the washer slit ②.
3. Lift up the arm pinch ass'y ③.
4. Lift up the holder escalator ④ and the gear escalator ⑤.

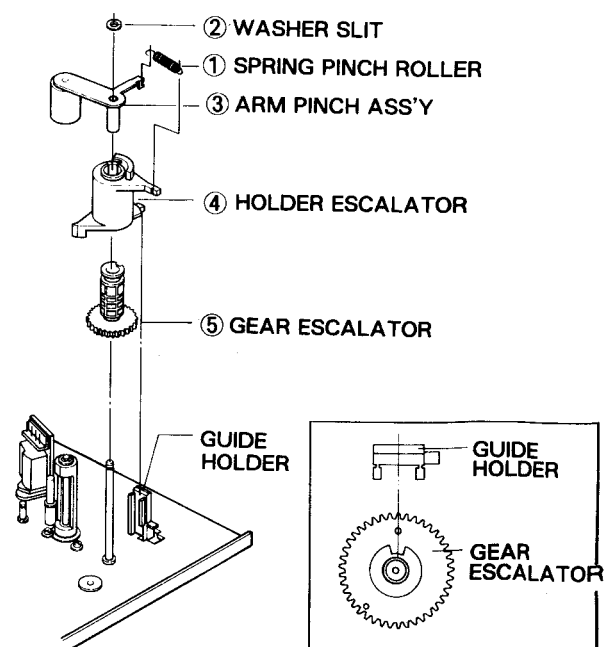


Fig. 45 Pinch Roller Unit & Gear Escalator Removal

2-7-16. Reassembly of Drive Pinch Ass'y and Gear Escalator

1. Install the gear cam drive ① so that the hole of gear cam drive is aligned with the hole of bracket pinch drive correctly. (Refer to Timing (A))
2. Install the gear cam pinch ② so that the hole of gear cam pinch ② is aligned with the hole of bracket pinch drive as shown in Timing (B).
3. Assemble the gear relay pinch ③ so that the protrusion of gear relay pinch ③ is aligned with the arrow mark on the gear cam drive ①. (Refer to Timing (C))

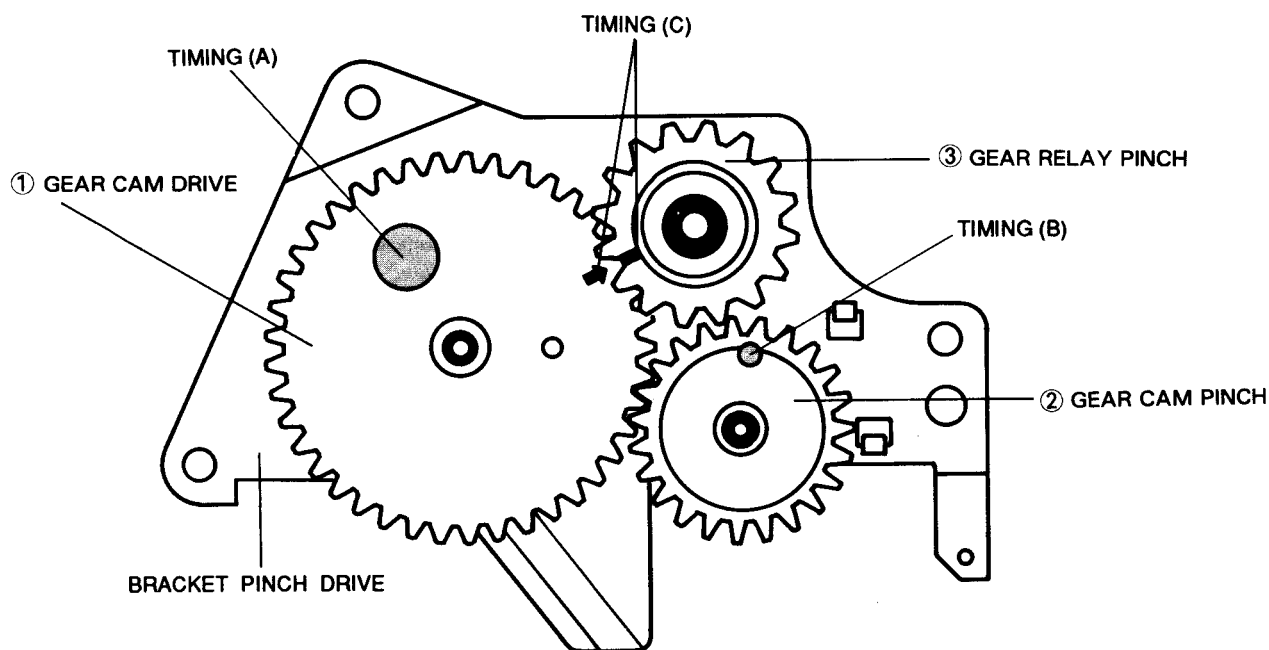


Fig. 46 Timing of Gear Cam Drive, Gear Cam Pinch & Gear Relay Pinch (Bottom View of Drive Pinch Ass'y)

4. Align the arrow mark of gear cam pinch ① with the slot of gear escalator ②. (Refer to Timing (D) in Fig. 47)

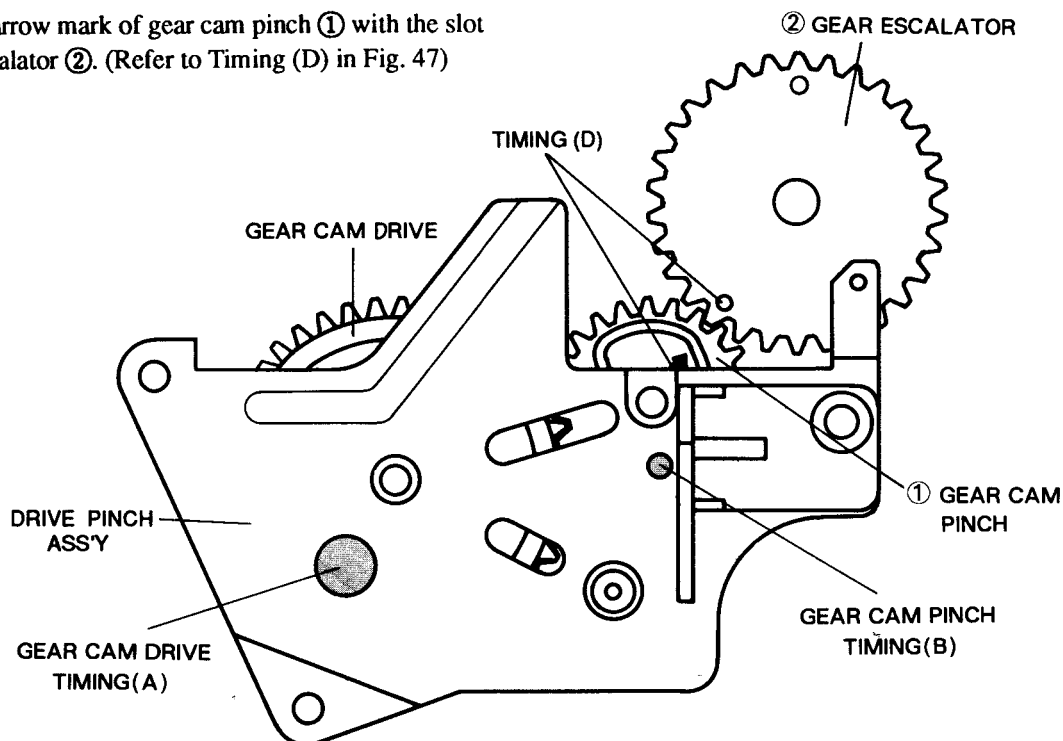


Fig. 47 Reassembly of Drive Pinch Ass'y and Gear Escalator (Top View of Drive Pinch Ass'y)

2-7-17. Reassembly of Full Review Arm Ass'y

1. Assemble the full review arm ass'y ① so that the gear review ② is touched the review stopper ③ as shown in Fig. 48.

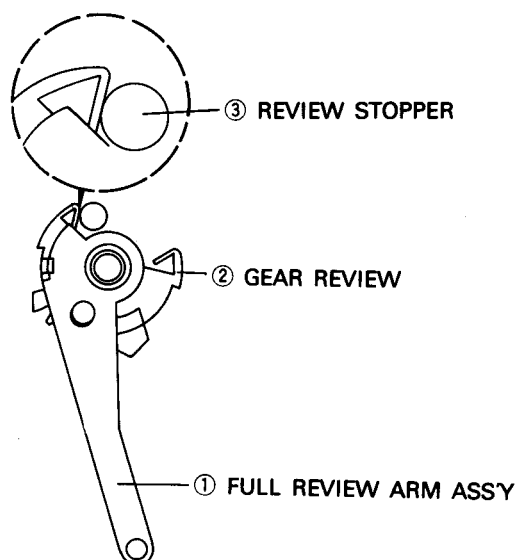


Fig. 48 Reassembly and Timing of Full Review Arm Ass'y

2-7-18. Reassembly of Gear Loading "L", "R" Ass'y

1. Reassemble the gear loading L/R ass'y in the eject mode while aligning the timing mark. (Refer to Fig. 49)

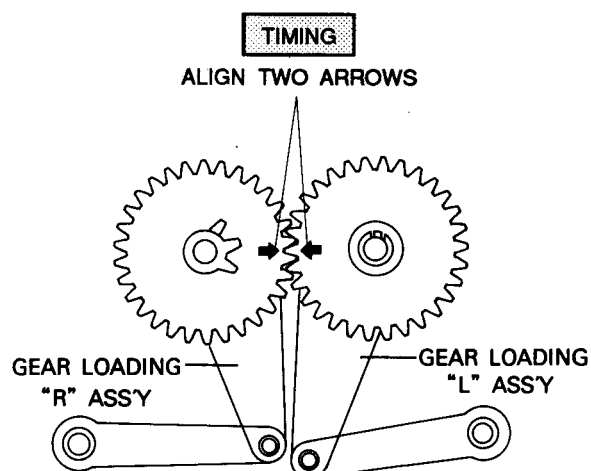


Fig. 49 Reassembly of Gear Loading "L", "R" Ass'y

2-7-19. Timing of Gear Master & Gear E/J Drive

1. Align the arrow mark of gear master ① with the arrow mark of gear E/J drive ②.

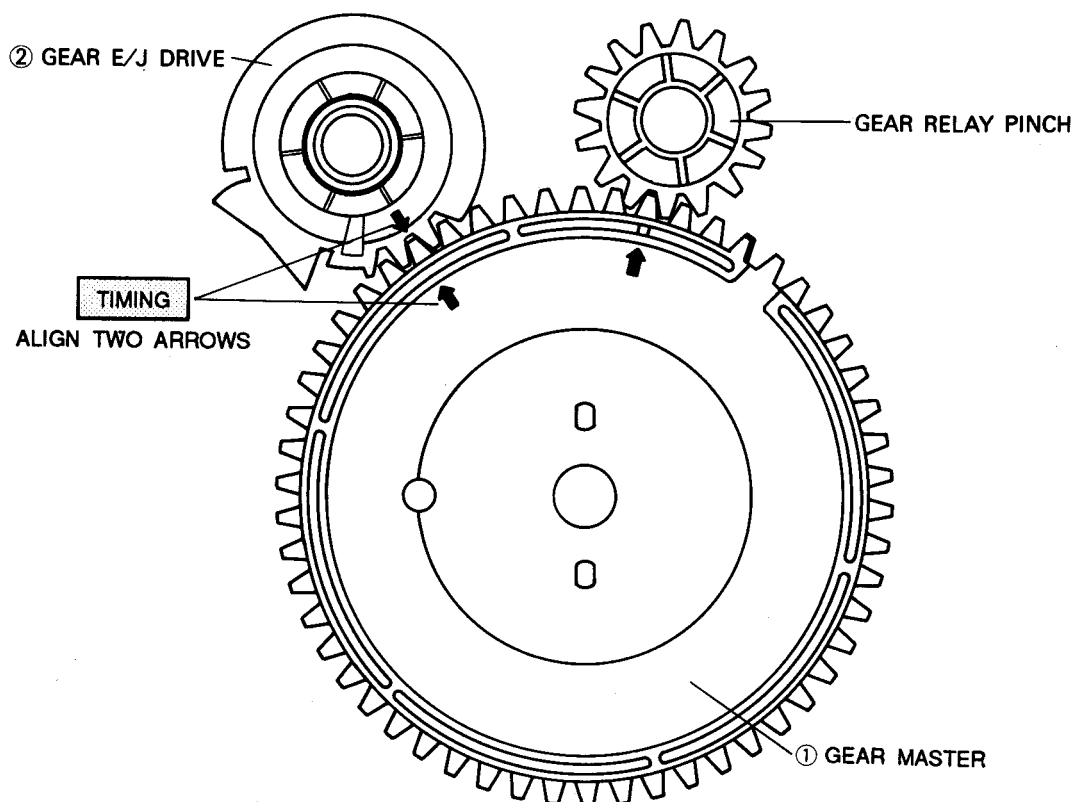


Fig. 50 Timing of Gear Master & Gear E/J Drive

2-7-20. Reassembly and Timing of Program S/W and Deck Joint PCB

1. Align the arrow with slot of program S/W ass'y.
2. Reinstall the deck joint PCB to main base.

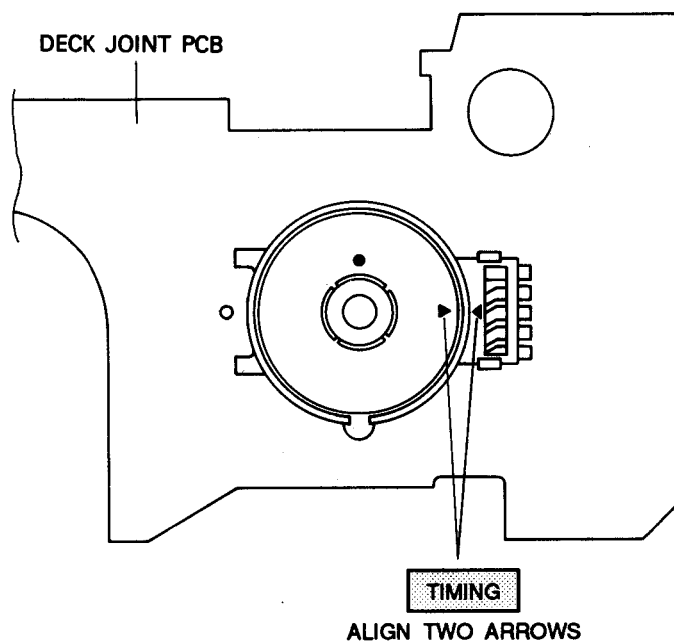


Fig. 51 Timing of Program S/W

2-8. TAPE TRANSPORT ASS'Y REMOVAL & REASSEMBLY

2-8-1. Pole Base "L", "R" Ass'y Removal & Reassembly

1. Move the pole base "L", "R" ass'y ①, ② to the end of slot.
2. Lift up the pole base "L", "R" ass'y ①, ②.
3. Install in reverse order.

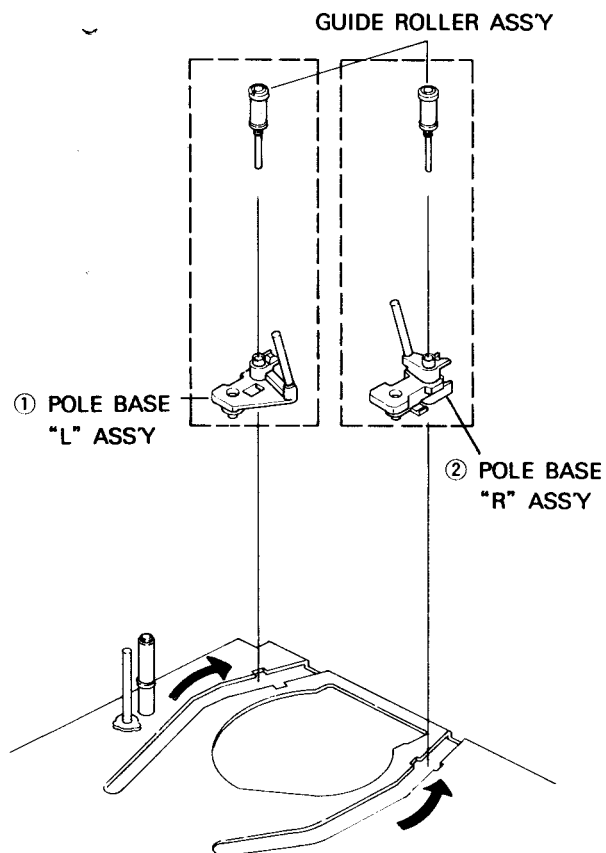


Fig. 52 Pole Base "L", "R" Ass'y Removal

2-8-2. Head Magnetic F/E Removal & Reassembly (Fig. 53)

1. Disconnect the lead connector ass'y ①.
2. Remove one (1) screw ②.
3. Lift up the head magnetic F/E ③.
4. Reinstall in reverse order.

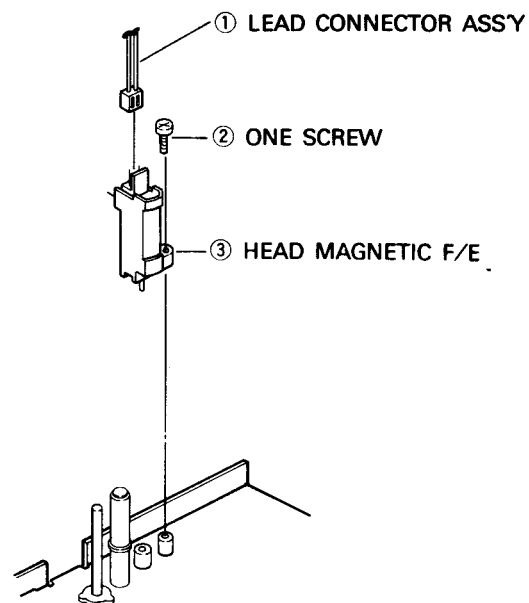


Fig. 53 Head Magnetic F/E Removal

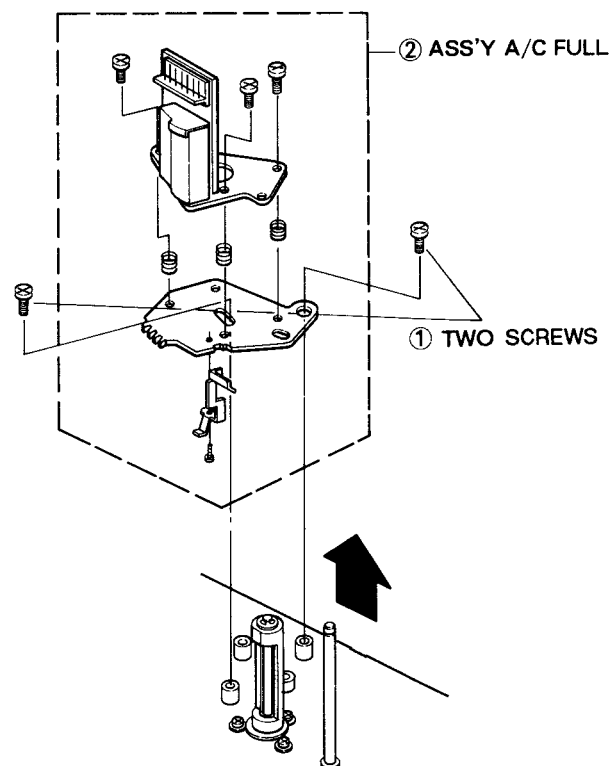


Fig. 54 Ass'y A/C Full Removal

2-8-3. Ass'y A/C Full Removal & Reassembly (Fig. 54)

1. Remove two (2) screws ①.
2. Lift up ass'y A/C full ②.
3. Reinstall in reverse order.

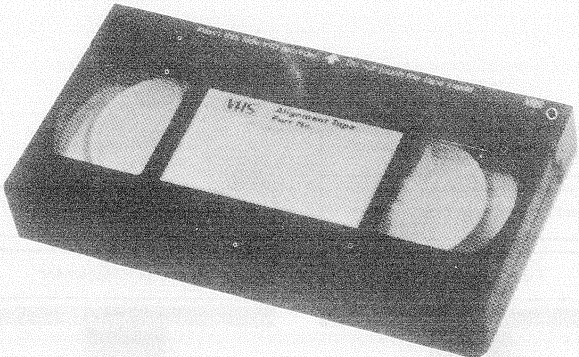
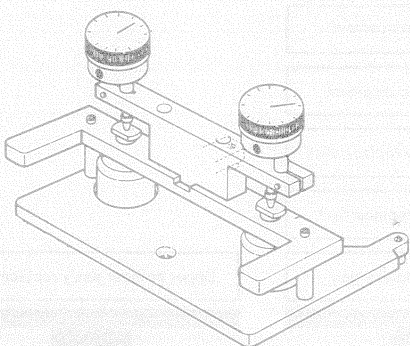
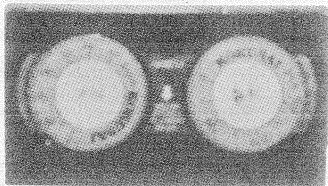
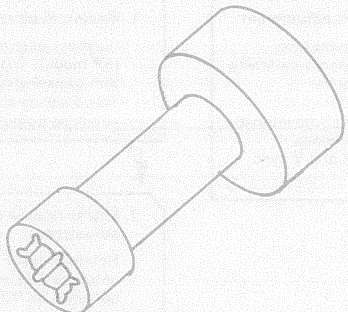
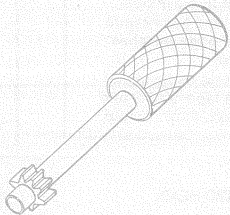
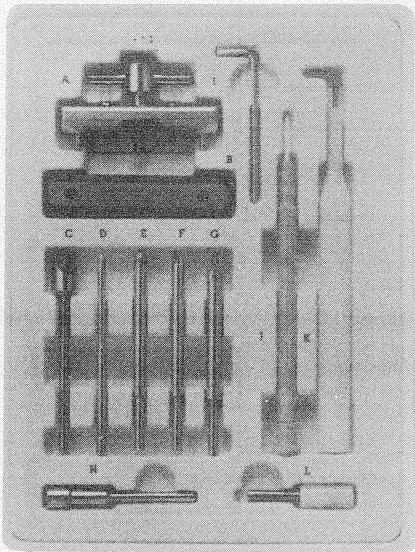
3. MECHANICAL ADJUSTMENT

3-1. MECHANICAL ADJUSTMENT TOOL

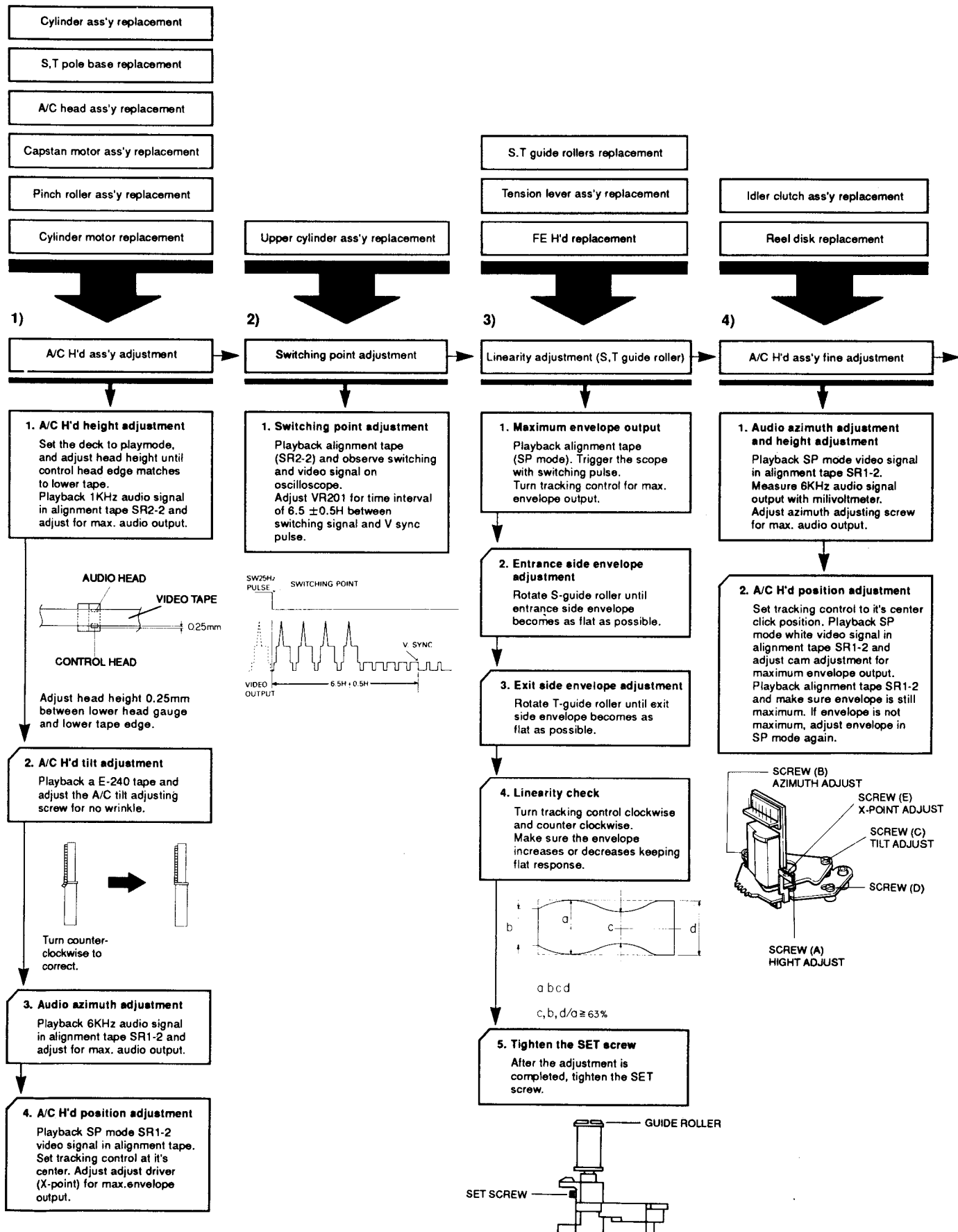
NO	JIG ITEM	CODE NO.	SPECIFICATION	DESCRIPTION	SKETCH NO.
1	ALIGNMENT TAPE	68140-100-207 68140-100-208 68140-100-210 68140-100-214	PAL ; SR1-2 PAL ; SR2-2 PAL ; SHR2-1 SECAM ; SR2-3	; LION PATTERN ; 6KHz ; COLOR BAR ; 1KHz ; COLOR BAR (Hi-Fi) L : 1KHz, R : 400Hz ; COLOR BAR ; 1KHz	A
2	MASTER PLANE AND REEL DISK HEIGHT JIG	68140-110-101	COMMON	; Use for height adjustment of reel disk and deck plate.	B
3	BACK TENSION CASSETTE TAPE	68140-100-105 (S.N.A)	COMMON	; Use for back tension adjustment of Supply reel.	C
4	TORQUE HEAD GAUGE	68140-100-100	COMMON ; LONG	; Use for torque adjustment of Take-up / Supply reel	D
5	X-POINT ADJUSTING DRIVER	68140-500-100	X-3	; Use for X-point adjustment of A/C head.	E
6	SERVICE JIG KIT	68140-100-301	UPPER CYLINDER REPLACING JIG	; Use for upper cylinder replacement.	F(A)
			DRIVER HANDLE	; Use for connection with each driver.	F(B)
			CAP. ADJ. DRIVER	; Use for CAP nut adjustment and X-position adjustment with A/C head movement.	F(C) ★
			(+)(-) DRIVER	; Use for screw adjustment and A/C head ass'y adjustment.	F(D-G) ★
			N3 BOX DRIVER	; Use for A/C head or roller supply review arm replacement and tape transport adjustment.	F(H)
			HEX WRENCH (0.9mm) HEX WRENCH (1.5mm) HEX WRENCH (2.0mm)	; Use for guide roller set screw fastening. ; Use for audio azimuth adjustment (Differ from item). ; Use for cylinder bush and driver replacement.	F(I)
			CERAMIC DRIVER	; Use for electrical adjustment.	F(J)
			HOUSING ASSEMBLING JIG	; Use for housing assembly.	F(K) ★
			TRANSPORT MECHANICAL ADJUSTING DRIVER	; Use for height adjustment of guide roller for envelope linearity adjustment.	F(L)

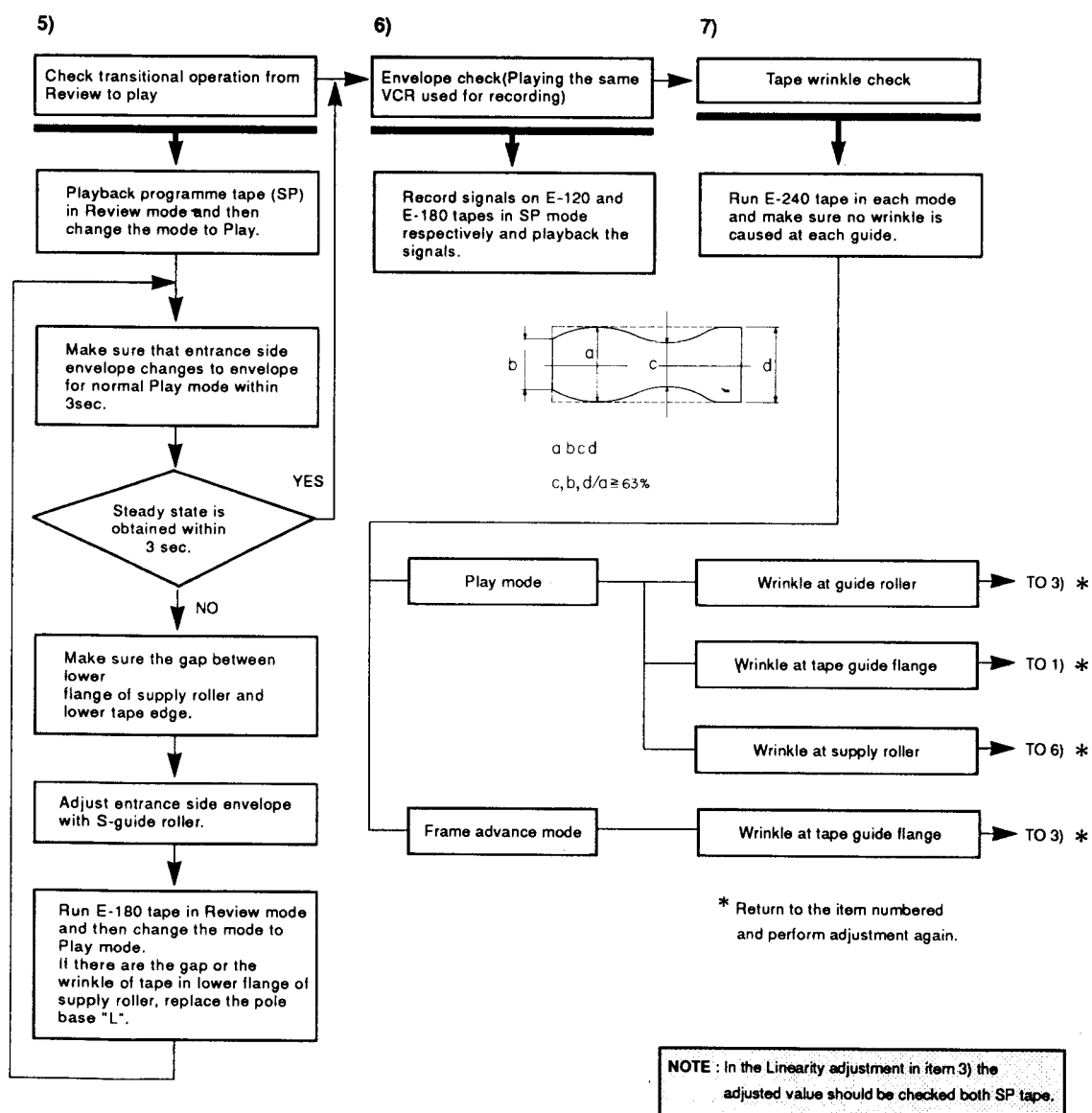
* S.N.A : Service Not Available

★ : The jig is not used for this chassis.

A : ALIGNMENT TAPE	B : MASTER PLANE AND REEL DISK HEIGHT JIG	
		
C : BACK TENSION CASSETTE TAPE	D : TORQUE HEAD GAUGE	E : X-POINT ADJUSTING DRIVER
		
F : SERVICE JIG KIT		
		
(A) ; UPPER CYLINDER REPLACING JIG (B) ; DRIVER HANDLE (C) ; CAP. ADJ. DRIVER (D - G) ; (+) (-) DRIVER (H) ; N3 BOX DRIVER (I) ; HEX WRENCH (0.9mm) HEX WRENCH (1.5mm) HEX WRENCH (2.0mm) (J) ; CERAMIC DRIVER (K) ; HOUSING ASSEMBLING JIG (L) ; TRANSPORT MECHANISM ADJUSTING DRIVER		

3-2. TAPE TRANSPORT SYSTEM ADJUSTMENT FLOW CHART





3-3. TAPE TRANSPORT SYSTEM

Note :

The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the followings :

- * Noises observed on the screen.
- * Tape damage.
- * Parts replacement in the tape transport system.

3-3-1. Location of Tape Transport Adjustment (Adjustment Reference)

Lower flange height of tape guide is used as the basic reference for the transport adjustment.
To keep height of the tape guide, do not apply excessive force onto the main base to prevent damage.

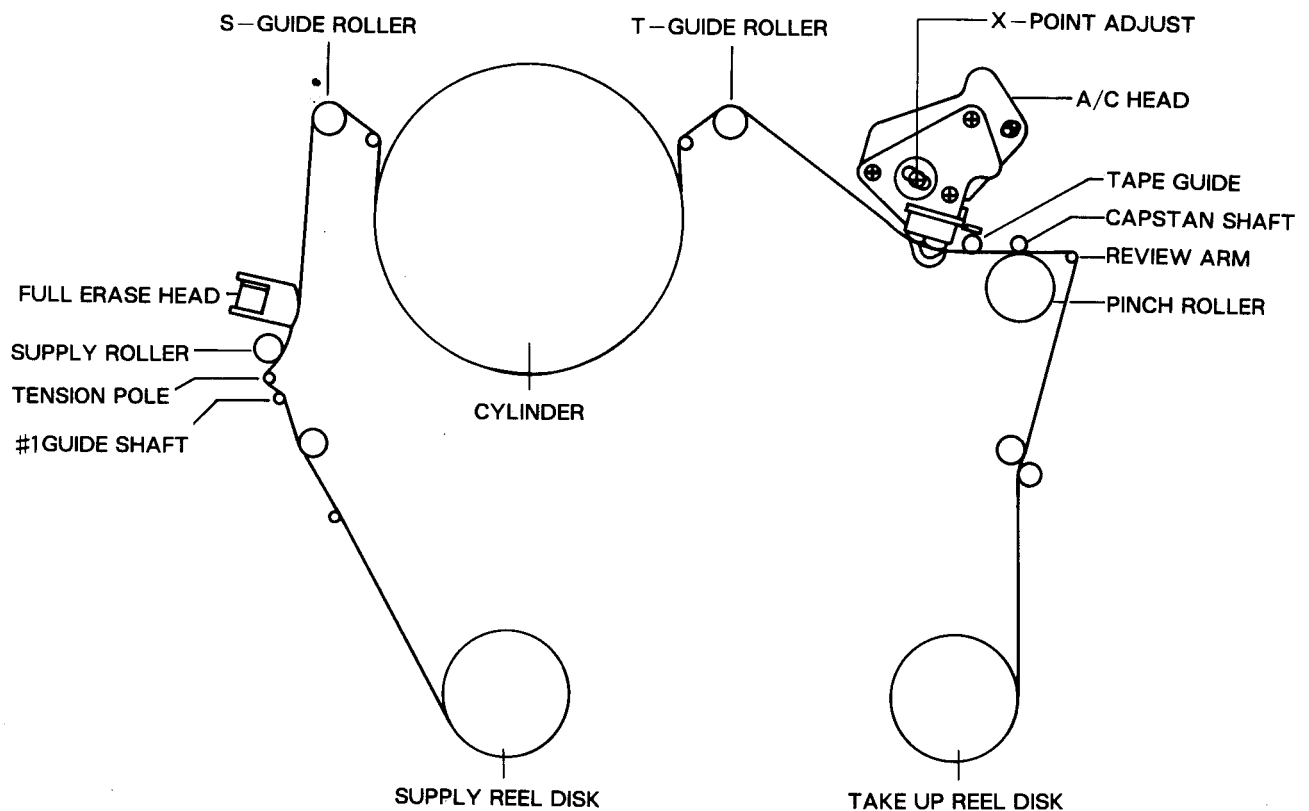


Fig. 1 Location of Tape Transport Adjustment

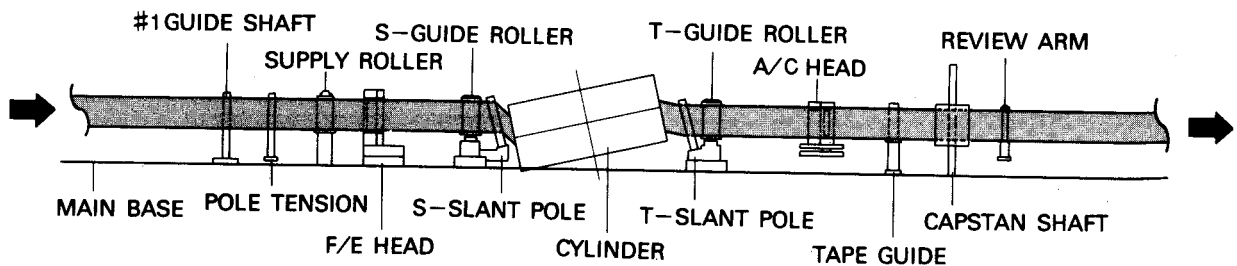


Fig. 2 Tape Travel Diagram

3-3-2. Tape Transport System Adjustment

1) Pre-adjustment

When the part(s) are replaced, perform required adjustments by referring to procedures for the tape transport system. When the part (s) are replaced, the tape path may be changed.

First run a E-180 tape and make sure excessive tape wrinkle does not occur at each tape guide.

1. If tape wrinkle is observed at the S, T-guide rollers, turn the S,T-guide rollers until wrinkle disappears.
2. If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the A/C head.

2) Adjustment procedure

1. A/C head assembly adjustment

Test Point : TP3203 (Envelope)
 TP404 (Audio Out)
 TP201 (H'D SW - Trigger)
 Test Tape : SR2-2 (Color Bar 1KHz)
 SR1-2 (Mono Scope 6KHz)
 Blank Tape (E-240)

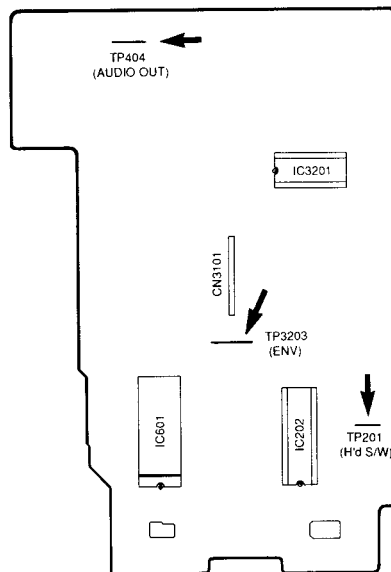


Fig. 3 Location of Test Point (Main PCB)

a. A/C head height adjustment

1. Run the alignment tape SR2-2 in the playback mode.
2. Observe surface of the audio head using a dental mirror.
3. Turn screw (A), (B), (C) clockwise or counterclockwise until the gap of lower tape edge and the lower edge of the control head is about 0.25 mm.
(Refer to Fig. 4 and 5)

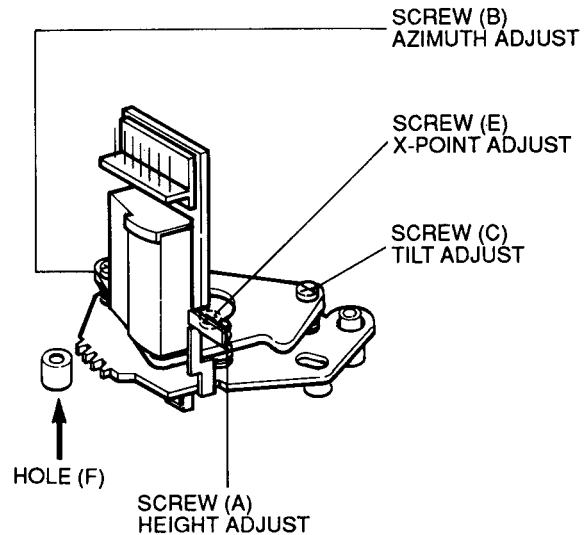


Fig. 4 Location of A/C Head Adjustment Screw

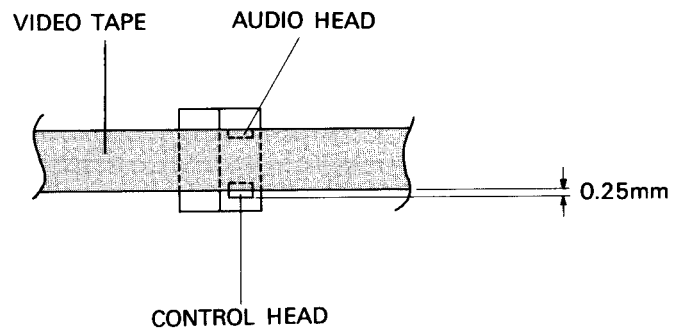


Fig. 5 A/C Head Height Adjustment

b. A/C head tilt adjustment

1. Playback a E-240 tape and observe position of the tape at the lower flange of tape guide.
2. Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 6 (B).
3. If a curl or wrinkle of the tape has occurred, slightly turn the screw (C) tilt adjust on the A/C H'd ass'y clockwise until it disappears as shown in Fig. 6 (B).
4. Reconfirm the A/C head height.

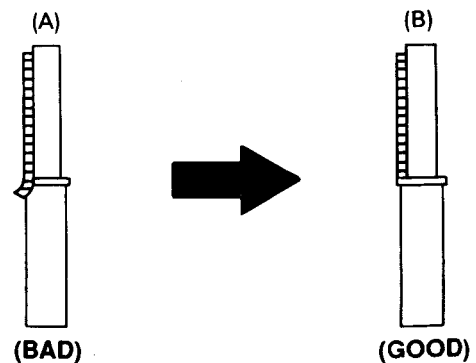


Fig. 6 Tape Guide Check

c. Audio azimuth adjustment

1. Load alignment tape (SR1-2 ; 6KHz) and playback the 6KHz signal.
2. Connect channel-1 scope probe to TP404.
3. Adjust screw (B) vertically to achieve maximum audio level. (See Fig. 4)

d. A/C head position pre-adjustment

1. Remove the panel front.
2. Playback the SR1-2 alignment tape.
3. Connect channel-1 scope probe to TP3204.
4. After playback operation, push the "TRK TEST" button of Timer PCB so that OSD mark on the TV monitor is set as shown in Fig. 8.
5. Turn the screw (E) counterclockwise.
6. Insert the adjusting driver (X-Point) into the hole (F) of main base and adjust the A/C head ass'y so that envelope waveform is maximum amplitude and then tighten the screw (E). (See Fig. 4)

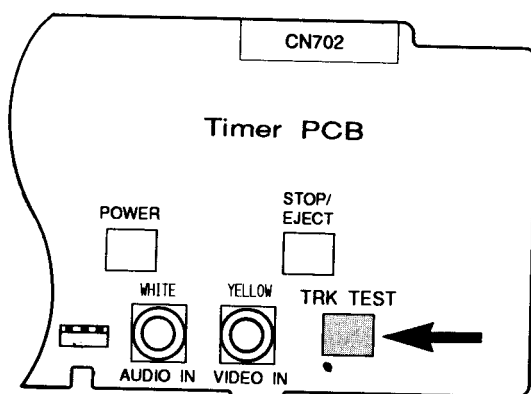


Fig. 7 Location of "TRK TEST" Button (Timer PCB)

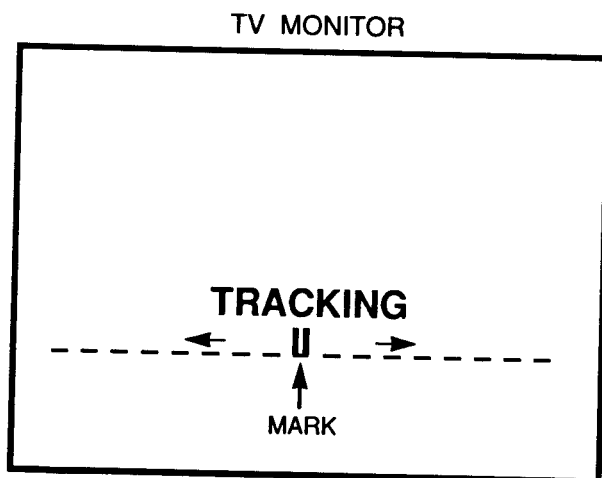


Fig. 8

2. Linearity adjustment (S,T-guide rollers adjustment)

Test Point : TP3203 (Envelope)
TP201 (H'D SW - Trigger)
Test Tape : SR1-2 (Mono Scope 6KHz)

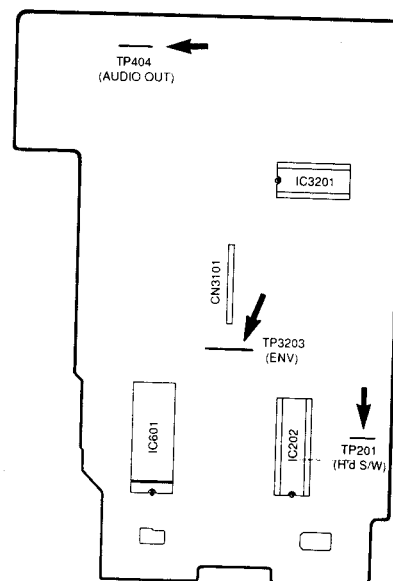
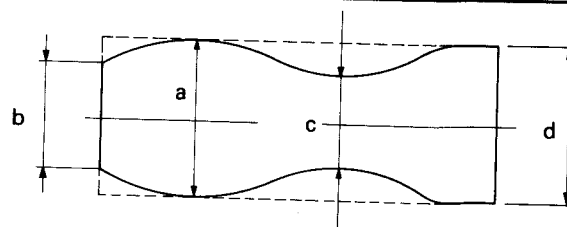


Fig. 9 Location of Test Point (Main PCB)

1. Playback the SR1-2 alignment tape (SP mode).
2. Observe the video envelope signal on an oscilloscope triggered by the video switching pulse.
3. Make sure the video envelope waveform (in its minimum output) meets the specification shown in Fig. 10. If it does not, adjust as follows ;

Note :

- a=Maximum output of the video RF envelope.
- b=Minimum output of the video RF envelope at the entrance side.
- c=Minimum output of the video RF envelope at the center point.
- d=Minimum output of the video RF envelope at the exit side.



a b c d

$$c, b, d/a \geq 63\%$$

Fig. 10 Envelope Waveform Adjustment

4. If the section A in Fig. 11 does not meet the specification, adjust the S-guide roller up or down.
5. If the section B in Fig. 11 does not meet the specification, adjust T-guide roller up or down.

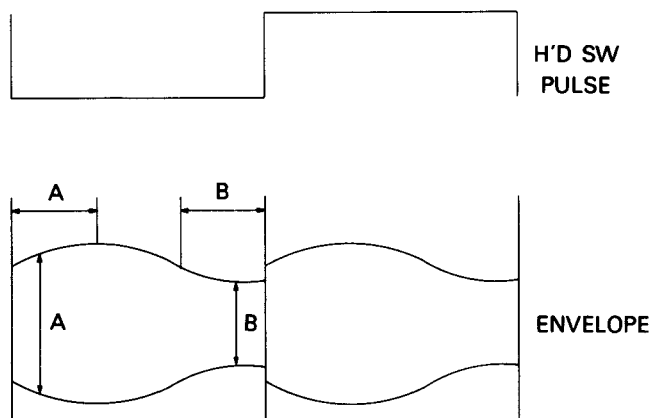


Fig. 11 Adjustment Points

6. Slightly loosen the set screw at the lower part of the S, T-guide rollers with a (Service Jig Kit-I ; Hex Wrench - 0.9mm) so that the guide roller can be adjusted with reasonable tightness. (Refer to Fig. 12)

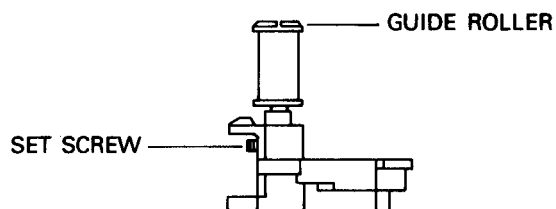


Fig. 12

7. Playback the SR1-2 alignment tape (SP mode).
8. Connect an oscilloscope CH-1 to the TP3204 and CH-2 to the TP201 on the same PCB for triggering.
9. Turn the guide roller heads with a flat head () screw driver (Service Jig Kit - L) to obtain flat video RF envelope as ideal envelope as shown in Fig. 13.
10. After the adjustment is completed, tighten the loading leader set screws.

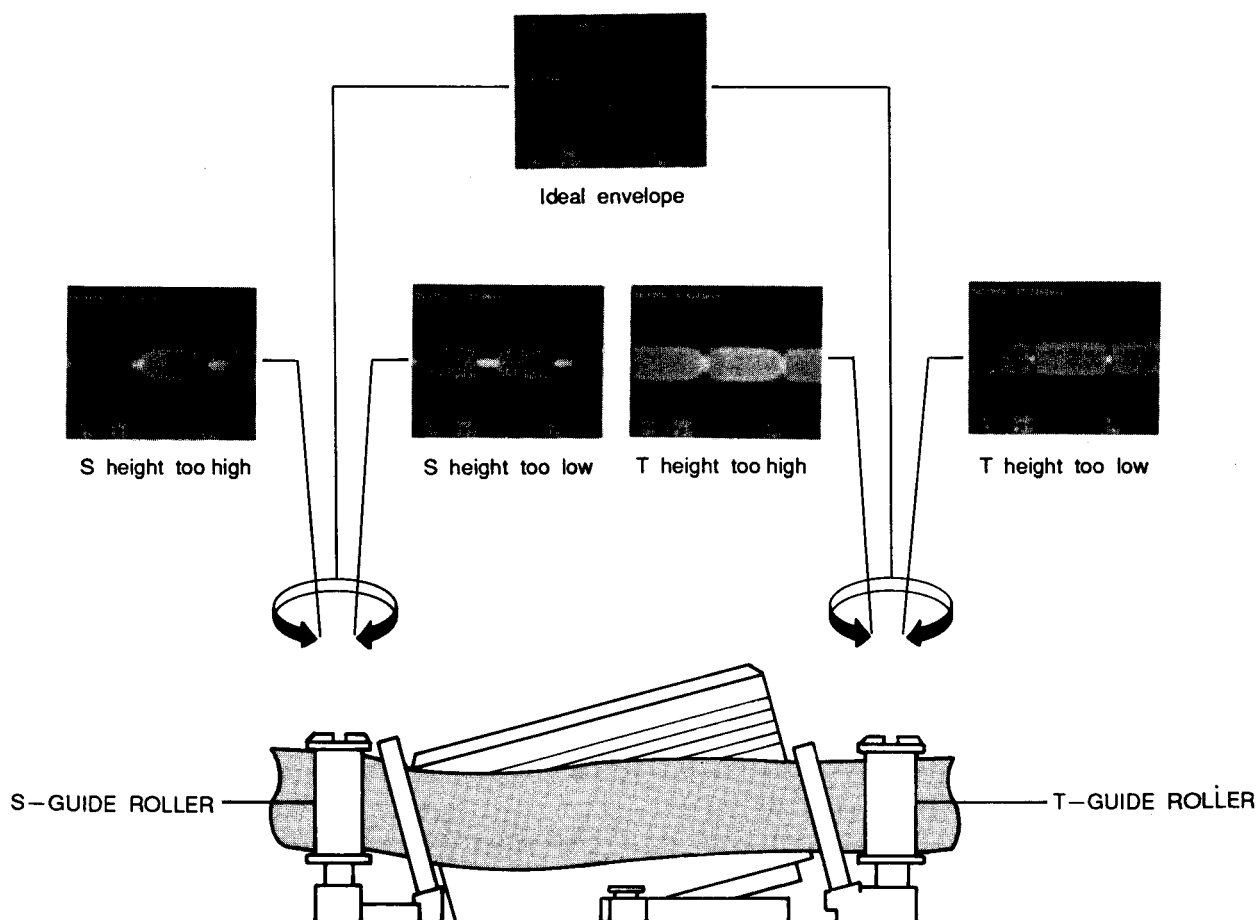


Fig. 13 S, T-Guide Roller Height Adjustments

3. A/C head assembly fine adjustment

Test Point : TP3203 (Envelope)
TP404 (Audio Out)
TP201 (H'D SW - Trigger)
Test Tape : SR1-2 (Mono Scope 6KHz)
SR2-2 (Color Bar 1KHz)
Blank Tape (E-240)

a. A/C head height adjustment

1. Playback the (SR2-2) alignment tape (SP mode).
2. Observe surface of the audio head using a dental mirror.
3. Turn the A/C head height adjusting screw (A), (B), (C) until the gap of lower tape edge and lower edge of the control head is about 0.25mm shown in Fig. 4 and 5.
4. Playback the 1KHz audio signal in the alignment tape and adjust the A/C head height for maximum audio output.

b. Tape wrinkle check at the lower flange of tape guide

1. If tape wrinkle is observed at the lower flange of tape guide, adjust the A/C tilt adjusting screw counterclockwise as shown in Fig. 6 until the wrinkle disappears.
2. If a gap is observed between the lower flange of tape guide and the lower edge of tape, adjust the A/C tilt adjusting screw clockwise until the tape travels along the lower flange.

Note : This adjustment should be done using beginning part of E-240 tape.

c. Azimuth adjustment

1. Playback the SR1-2 alignment tape (6KHz audio on it).
2. Adjust the A/C azimuth adjusting screw (B) for maximum audio output as shown in Fig. 4.

d. A/C head position adjustment

1. Playback the SR1-2 alignment tape (SP mode).
2. Trigger the oscilloscope with the video switching pulse and observe the video envelope waveform.
3. Insert the adjusting driver (X-Point) in to the hole (F) of main base and turn the adjusting driver slowly so that video envelope reach a peak level and then tighten the screw (E). (See Fig. 4)

4. Check for transitional operation from review to play

Check transition from review mode to play mode, using a pre-recorded SP tape, make sure the entrance side of envelope comes to an appropriate steady state within 3 seconds as shown in Fig. 14.

If the envelope waveform does not reach specified peak-to-peak amplitude within 3 seconds, adjust as follows :

1. Make sure there is no gap between the supply roller lower flange and the tape.
If there is a gap, adjustment is not possible.
(Once adjust the supply guide roller again.)
2. Change operation mode from the review to the play mode again and make sure entrance side of envelope rises within 3 seconds.

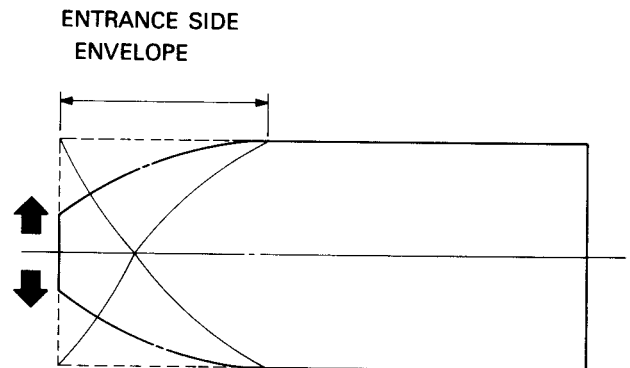


Fig. 14 Video envelope rising when operation mode changes from review to play mode.

5. Envelope check

1. Make recordings on E-120 and E-180 tapes, and make sure the playback output envelope meets the specification as shown in Fig. 15.
2. Playback a self recorded tape (recording made on this unit), (with a E-120) the video envelope should meet the specification as shown in Fig. 15.
In SP mode, (A) should be same as (B).
If the head gap is wide, upper cylinder should be replaced.

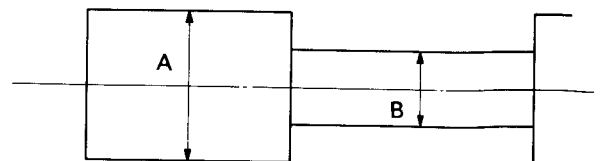


Fig. 15 Envelope Output and Output Level Difference

6. Tape wrinkle check

1. Run the E-240 tape in the playback, FPS, review and the pause mode and then observe tape wrinkle at each guide.
2. If excessive tape wrinkle is observed in the mode shown below, perform the associated adjustment shown below.

a. Playback mode

- Tape wrinkle at the S,T-guide roller section : Linearity adjustment.
- Tape wrinkle at tape guide flange : A/C head assembly coarse adjustment.

3-4. REEL TORQUE

3-4-1. General Features

1. The rotation of the capstan motor operates the clutch ass'y through the belt capstan motor which is directly connected to the assembly clutch.
2. Brake operation and shift operation in FF/REW are done by a slide lever.
3. Transportation of accurate driving force is done by gears. (clutch ass'y)
4. Changeable torque is done by torque control. (clutch ass'y)

MODE	TORQUE g/cm	GAUGE
PB/REC	110 ± 30	Cassette Torquement
RPS	170 ± 30	Cassette Torquement
FF/REW	Min 600	Torque Gauge

Note : If the spec is out of above chart, replace the clutch ass'y and then recheck.

3-4-2. Location of Tension Pole and Back Tension Adjustment

1. Remove the side chassis "L", "R" ass'y and set the deck to play mode.
2. Adjust the cam tension to $0 \sim -0.5$ mm from the center of supply roller.
3. The back tension meter should be used for adjustment of back tension.

Check back tension, should be 40 ± 5 g.cm.

If not, adjust cam tension.

Counterclockwise : Torque UP

Clockwise : Torque DOWN

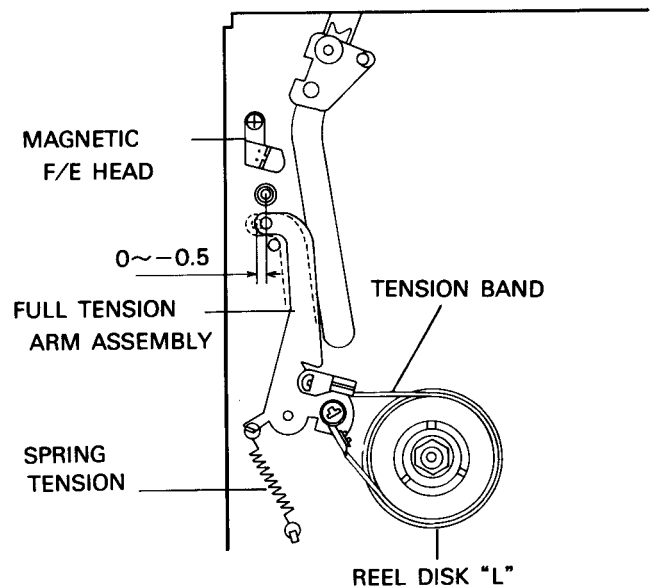


Fig. 16 Tension Pole and Back Tension Adjustment

BACK TENSION METER

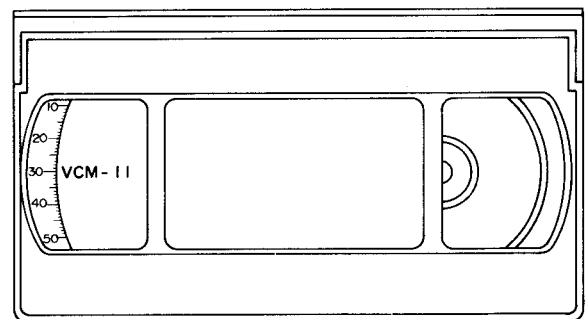


Fig. 17 Back Tension Tape Torque Cassette

3-4-3. Reel Torque Adjustment

1. Reel torque adjustment

a. Review mode

Excessive torque may damage the tape, however weak torque may not wind the tape back in cassette.

b. REC/Play back (Take-Up) mode

Weak torque can not wind the tape to the end, however excessive torque make the tape expand.

c. Inspection

Rewind the torque cassette which is recorded in SP mode to the end and measure the torque shown below.

Reverse Torque : 140 ~ 200g.cm.

Record/Playback Torque : 80 ~ 140g.cm.

2. Reel torque check

a. Load the torque cassette in the VCR and fast forward the tape before proceeding with measurement.

b. Set the VCR to the Review mode and feed the tape for about 15 sec., and then make sure the take-up torque of 140 ~ 200g.cm is obtained while observing the left torque meter.

c. After completion of step a,b set the VCR to the PLAY mode and feed the tape for about 30 sec. Read the right torque meter and check whether the torque of 80 ~ 140g.cm is obtained.

d. When the review torque and the playback torque are out of limit, replace the clutch assembly.

e. When the clutch assembly is replaced, perform the reel torque check.

3. Precautions for using torque cassette (KT-300NR)

a. Before loading a torque cassette in the VCR, always remove tape slack.

The tape slack can be removed by rotating the reel to its take-up direction. (The tape tends to slack when there is no reel brake actions).

b. When the torque cassette is loaded, confirm the followings.

b-1. Make sure the tape does not ride up or over the tape guide. If it does, do not eject the tape but bring the tape to its correct position, taking care not to damage the tape.

b-2. Make sure the tape has no slack, if it has slack, operate the VCR in FF or REW mode and then stop the tape. Then make sure the tape has no slack.

b-3 After above confirmation, proceed to the reel torque adjustments and confirmation.

c. Cautions for removal of torque cassette.

c-1. When removing the torque cassette from the VCR, set the VCR to the stop mode and wait for several seconds. Then, make sure the tape has no slack. Push the EJECT button to remove the cassette.

c-2. When removing the torque cassette from the VCR, also make sure the tape has no slack inside the cassette lid before pulling the cassette from the VCR. If the tape has no slack inside the cassette lid, carefully bring the tape in place and then pull the cassette.

d. If the previous precautions 1, 2 and 3 are not performed properly, the tape may be damaged and correct measurements can not be performed.

e. Do not use worn out or damaged tape. If they are used, they may damage video heads on the cylinder. In such a case, always replace the tape with a new one.

4. Reel disk height adjustment

1. Set the jig for reel disk height to the reel disk L, R as shown in Fig. 18.

2. The readings of L, R should be located within ± 0.05 .

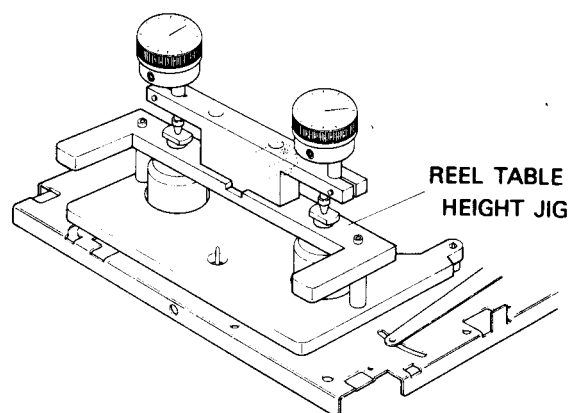


Fig. 18 Reel Disk Height

4. ELECTRICAL ADJUSTMENTS

4-1. PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustment only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

4-1-1. Required Test Equipment

1. Color Television or Monitor.
2. Oscilloscope : wide-band, dual-trace, triggered delayed sweep.
3. Trackingscope.
4. Monitor scope.
5. AC Voltmeter.
6. DC Voltmeter.
7. Signal Generator : RF/IF Sweep/Marker
8. PAL TV Channel Signal Generator.
9. Recording tape (Blank tape).
10. Alignment tapes : SR1-2, SR2-2.

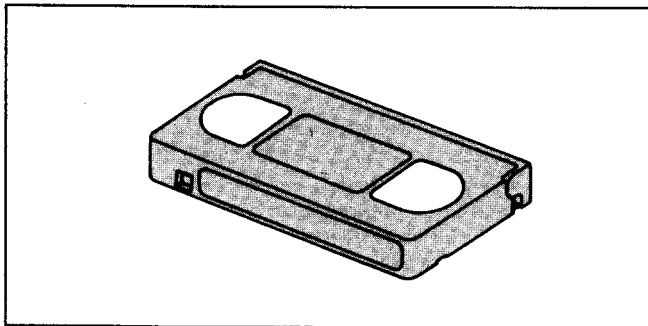


Fig. 1 Tape

11. Pattern Generator : PAL color bar, 100% White.

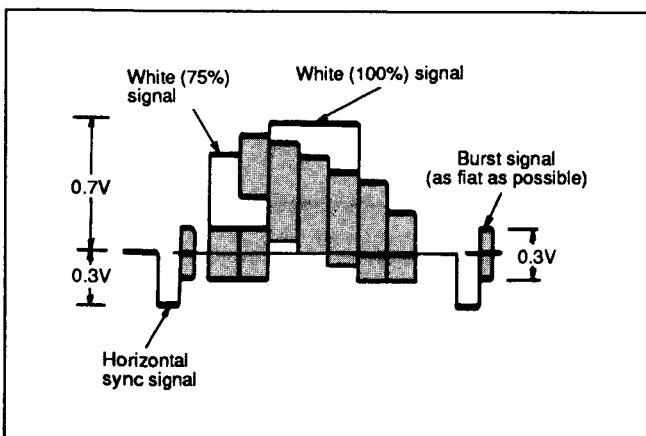


Fig. 2 Color bar signal of pattern generator

(Color Bar Signal)

The 75% color bar signal recorded on the alignment tape is shown in Fig. 3.

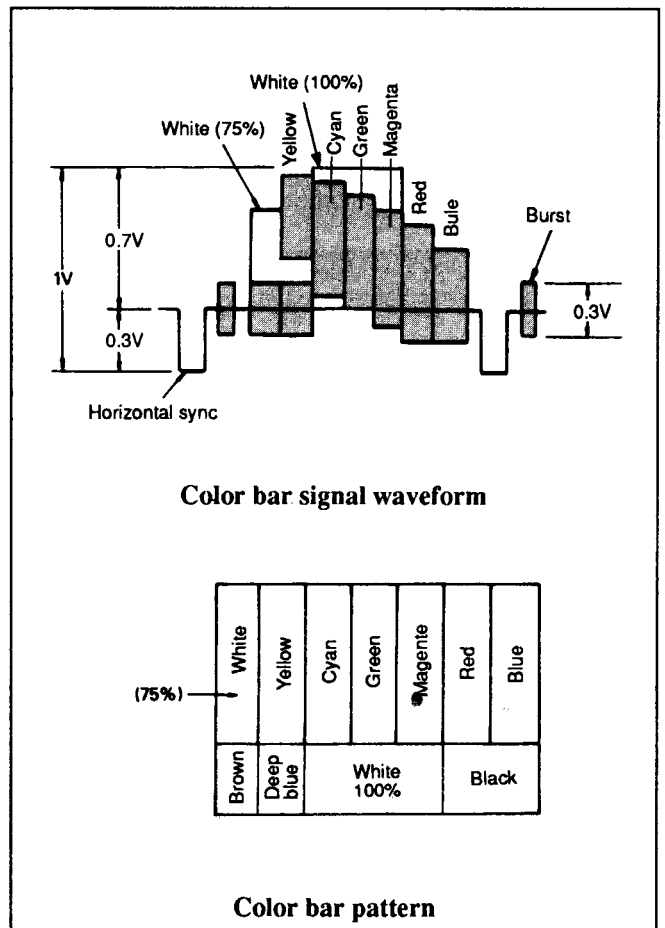


Fig. 3 Color bar signal of alignment tape

4-1-2. Alignment Tape Contents

Tape	Video Signal	Audio Signal	Applications
SR2-2 (SP)	Color Bars	1 KHz	* Video signal playback circuit checks and adjustments. * Audio signal playback circuit checks and adjustments.
SR1-2 (SP)	Monoscope	6 KHz	* Interchangeability checks and adjustments. * SERVO circuit check and adjustments. * Audio head azimuth adjustments.
SR2-3 (SP)	Color Bars	1 KHz	* Video signal playback circuit checks and adjustments.

4-1-3. Check and Adjustment Steps

The check and adjustment steps are provided in the form of charts.
For clarity, the nomenclature used in the charts is outlined below.

No.	Checks and adjustments are numbered in the recommended sequence in which they are to be performed.
Item	Name assigned to the particular check and adjustment step.
Check Point	Location to which measuring instrument (oscilloscope unless otherwise noted) is to be connected.
Adjustment Parts	Variable component (resistor, capacitor, etc.) to be adjusted in this step.
Signal	Input signal required to perform adjustment.
Mode	Equipment operating mode at time of check of adjustment.
100% White	100% White signal as video input.
Color bar	Color bar signal as video input.
1KHz	Supply a 1KHz sinewave as audio input signal.
STOP	Power on and machine in stop mode.
E-E	Electronic to Electronic.
REC	Recording mode.
PB	Playback mode.
SR2-2	Playback SR2-2 alignment tape.
SR1-2	Playback SR1-2 alignment tape.
STILL	Playback then pause.

4-1-4. Input/Output Level Impedance

Video input :	RCA jack (Front) ; 0.5 to 2Vp-p 75 Ω unbalanced Socket jack (Rear) ; 0.5 to 2Vp-p 75 Ω unbalanced
Video output :	Socket (Rear) ; 1 ± 0.1 Vp-p 75 Ω unbalanced
Audio input :	RCA jack (Front) ; -8dBm 50 K Ω unbalanced Socket jack (Rear) ; -8dBm 50 K Ω unbalanced
Audio output :	Socket jack (Rear) ; -6 ± 3 dBm 1 K Ω unbalanced

4-2. SERVO & VIDEO SECTION

STEP	ADJUSTMENT ITEM
1.	MODE and INPUT SIGNAL/ALIGNMENT TAPE
2.	TEST POINT and ADJ. part
3.	RESULT & REMARKS

ADJ. part
Test Point

4 FM CARRIER & DEVIATION

1. "REC", 100% white signal (LINE or AV).
2. TP3201 (FM C/D) & VR3203 (DEVIATION), VR3205 (FM CARRIER).
3. * Connect tracking scope to TP3201.
* Adjust VR3205 so that the frequency is 3.8 ± 0.1 MHz.
* Adjust VR3203 so that the frequency is 4.8 ± 0.1 MHz.



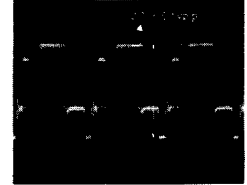
2 VIDEO E-E LEVEL

1. "E-E" (stop mode), PAL color bar signal (LINE or AV).
2. TP3202 (VIDEO OUT) & VR3206 (E-E LEVEL).
3. * Connect an oscilloscope CH-1 to TP3202.
* Adjust VR3206 for 2.0 ± 0.1 Vp-p from sync tip to white peak level.



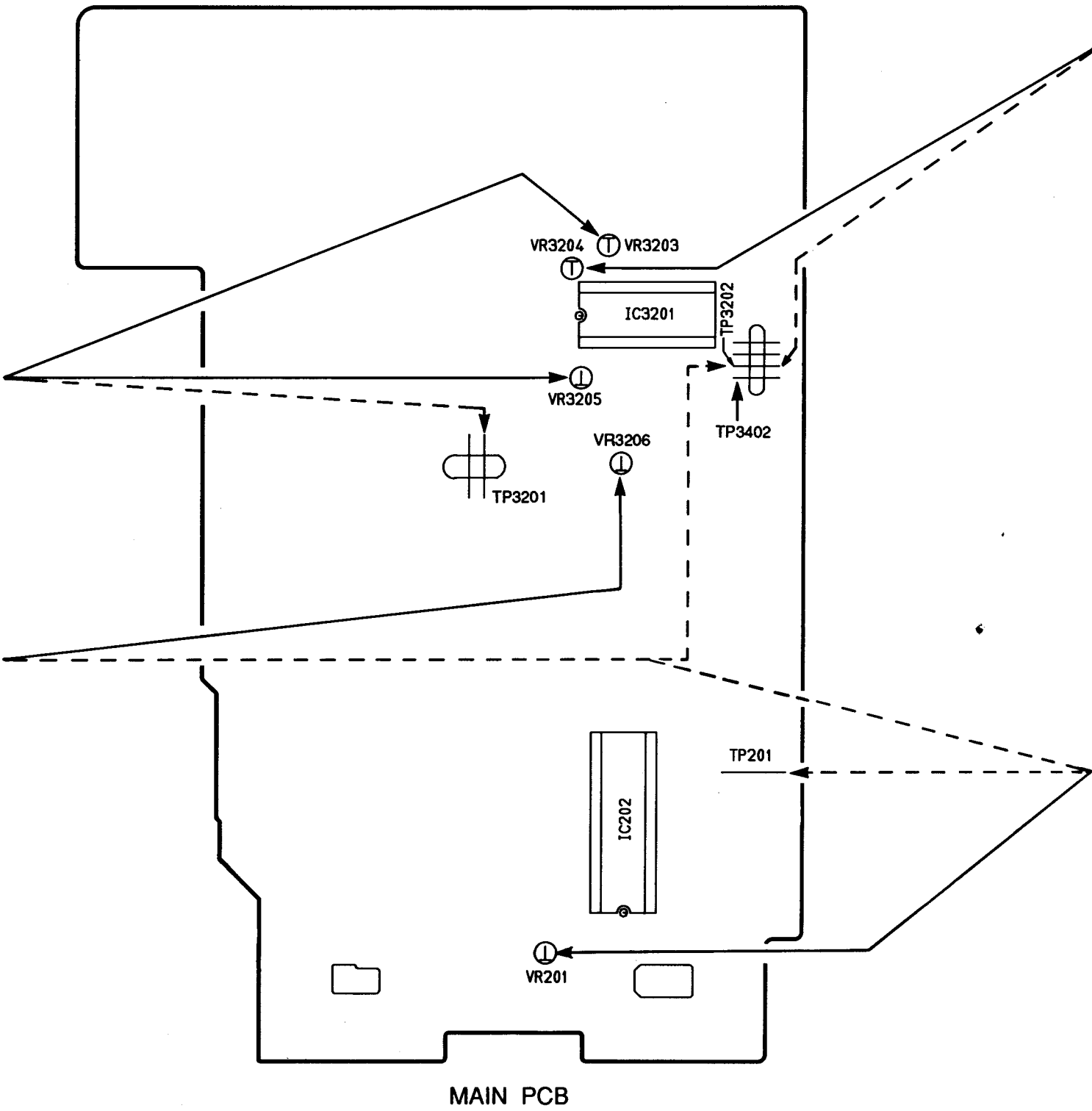
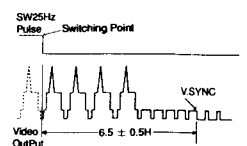
3 VIDEO PB LEVEL

1. "PB", Alignment tape SR2-1.
2. TP3202 (VIDEO OUT) & VR3204 (PB LEVEL).
3. * Connect an oscilloscope CH-1 to TP3202.
* Adjust VR3204 so that PB level becomes 2.0 ± 0.1 Vp-p.



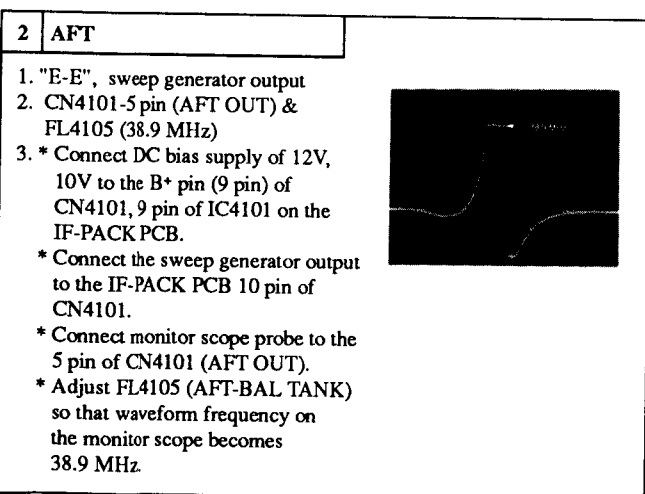
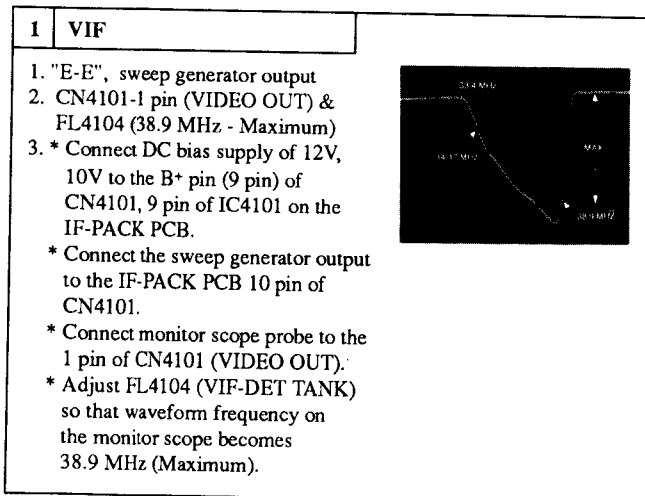
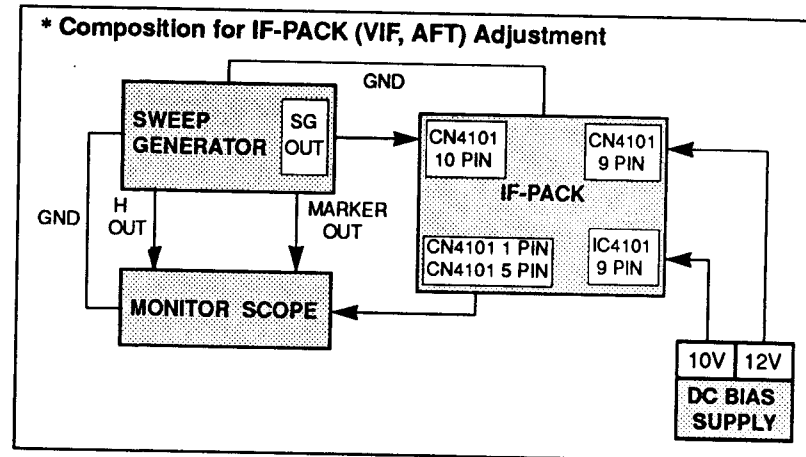
1 SWITCHING POINT

1. "PB", Alignment tape SR2-2.
2. TP201 (H'd SW P), TP3202 (VIDEO OUT) & VR201 (SW POINT).
3. * Connect an oscilloscope's CH-1 to TP201 for triggering and CH-2 to TP3202.
* Adjust VR201 so that the switching point is positioned 6.5 ± 0.5 H from the V-SYNC left edge as shown.

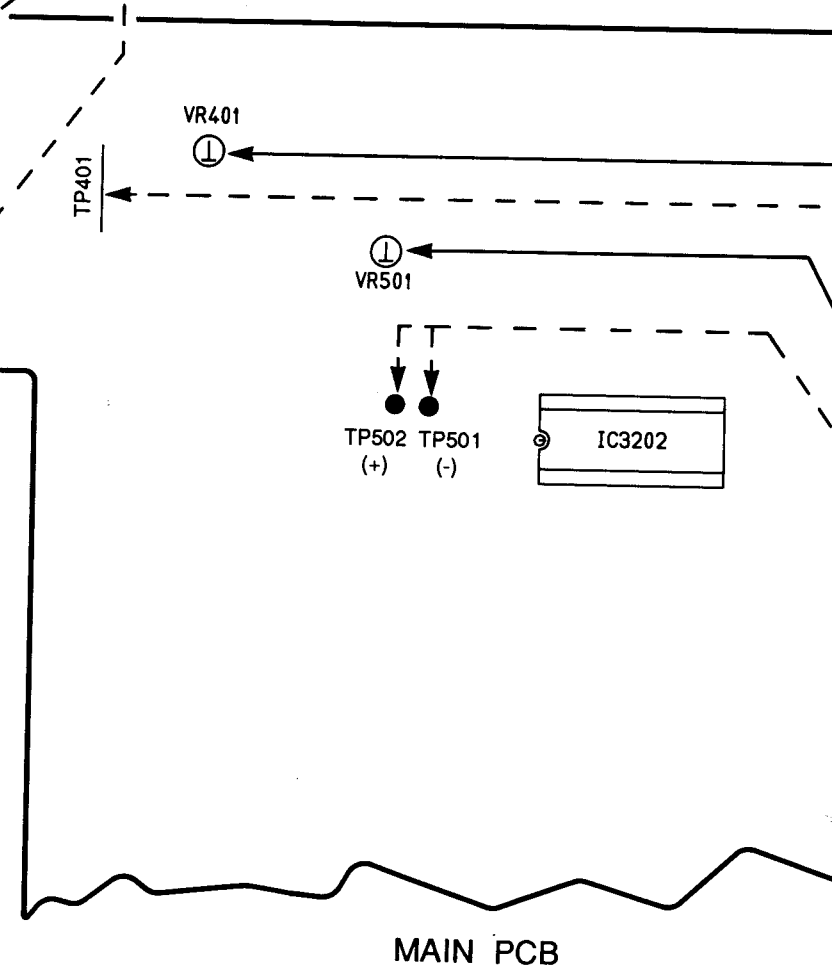
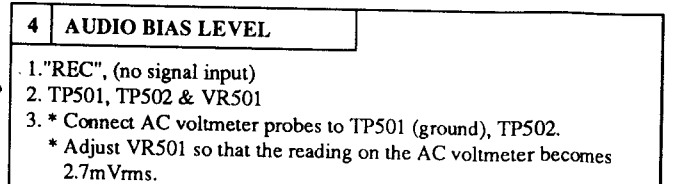
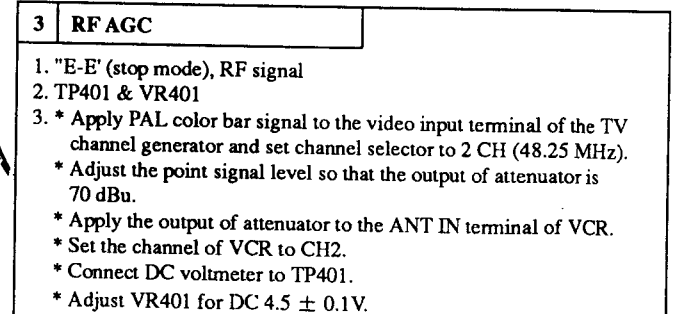
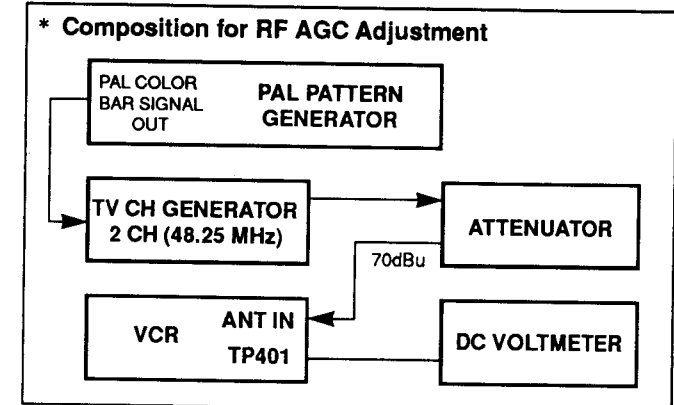
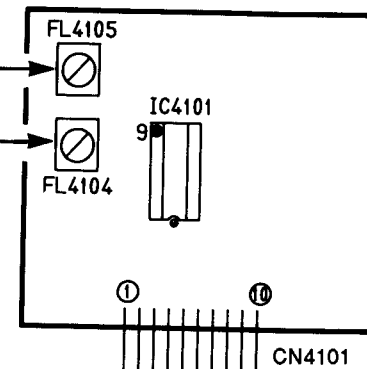


4-3. IF-PACK/TUNER & AUDIO SECTION

Note :
1. VIF, 2. AFT adjustment should be performed after removing IF-PACK PCB from Main PCB.

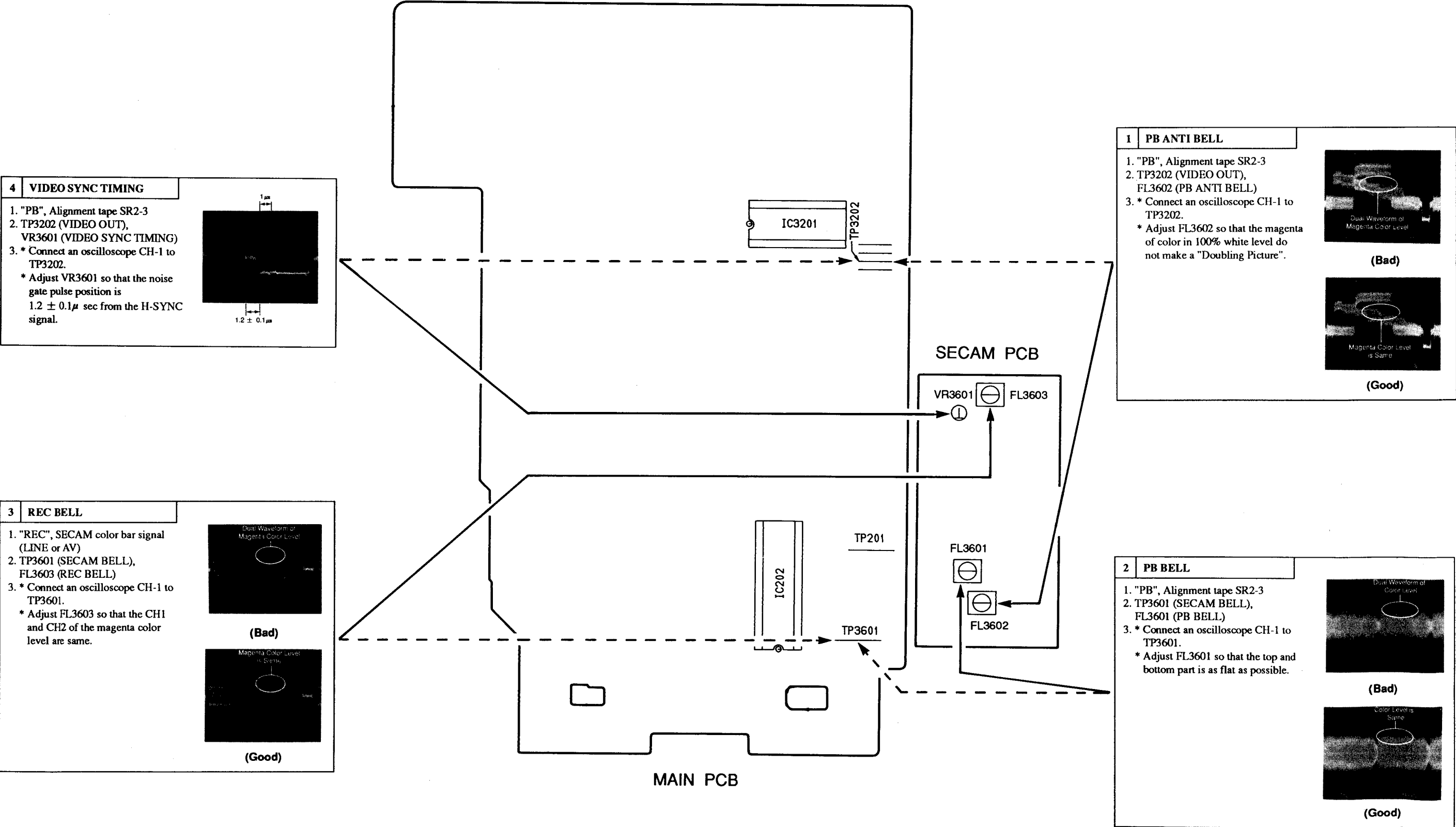


IF-PACK PCB



MAIN PCB

4-4. SECAM SECTION



5. MICOM IC PIN FUNCTION CHART/PROGRAM SWITCH TIMING CHART

5-1. SYSTEM AND TIMER CONTROL IC PIN FUNCTION DESCRIPTION

- System and Timer Control Microcomputer μ PD75216ACW (One Chip)

5-1-1. Circuit/Mode/Mechanism Control Microcomputer μ PD75216ACW (IC601 on Main Board)

1. Function description

- 1) Power ON/OFF control
- 2) Servo serial data
- 3) Loading motor control
- 4) Error detection
 - Drum rotation
 - Mechanism position
- 5) Sensor :
 - Start sensor
 - End sensor
 - No cassette
- 6) L.T.C
- 7) Auto rewind
- 8) Circuit control
- 9) Slow control

2. Abbreviated specifications

- High-speed instruction cycle ; 0.95 μ s
- Program memory : 16256 x 8
- Data memory (RAM) : 512 x 4
- Memory for bit manipulation
- General-purpose register
- Accumulators
- Vector interrupt function
- 8-bit basic interval timer
- Two 8-bit timer/event counters
- 8-bit serial interface
- On-chip power-on reset circuit
- Internal clock oscillator for crystal/ceramic resonator
- Standby operation (STOP/HALT)
- Process : C-MOS
- Operating Voltage : 5V $\pm$ 10%
- Package : 64-pin Dip

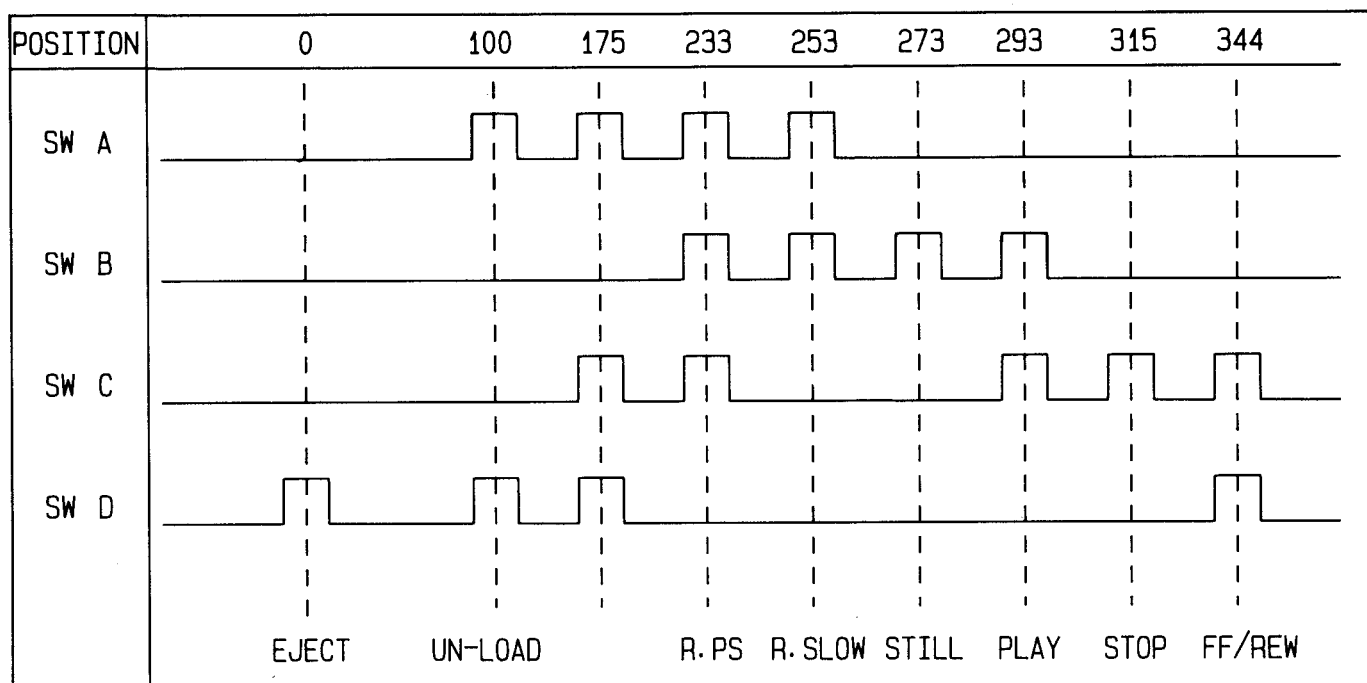
5-1-2. System and Timer Control Peripheral Circuit Interface (IC601 on Main Board)

PIN NO.	SIGNAL NAME	I/O	FUNCTION AND I/O LEVEL
1	S4	O	Digitron anode direct drive port
2	S3	O	Digitron anode direct drive port
3	S2	O	Digitron anode direct drive port
4	S1	O	Digitron anode direct drive port
5	CTL-P C/D	I	Input port of count down control pulse
6	KEY 1	I	Key matrix input signal
7	KEY 2	I	Key matrix input signal
8	KEY 3	I	Key matrix input signal
9	H'D SW	I	Input port of head switching pulse
10	ENV DET	I	Video envelope wave input port for head amp switching
11	C.FG C/D	I	Input port of capstan FG count down pulse
12	PWR DET	I	Input port for power detection of system controller
13	OUT PUT EXP	O	Strobe signal to output expander
14	H'D AMP SW	O	Output port for head amp switching
15	SERVO CLK	O	Serial clock to servo
16	SERVO DATA	O	Serial data to servo
17	C.M CTL	O	Output port for capstan motor control
18	STEP/SLOW	O	Output port for slow mode control
19	DM C1	O	Drum motor control port in slow mode
20	DM C2	O	Drum motor control port in slow mode
21	INDEX	I	Input port of index signal detection
22	VPS DATA IN	I	Input port of VPS data
23	ATR ENVE	I	Input port envelope wave for auto tracking
24	VPS CLOCK	O	Serial clock to VPS
25	SYNC DET	I	Video signal detection "H" when video signal

PIN NO.	SIGNAL NAME	I/O	FUNCTION AND I/O LEVEL
26	AFT	I	Input port for automatic fine tuning from tuner block
27	COM DATA IN	I	Serial data input port from NVRAM and Deck Joint
28	REMOCON IN	I	Remote control input port
29	TUNER PWM	O	Output port for Tuner PWM (Pulse Width Modulation)
30	X1	O	Crystal ceramic connect port for system clock OSC
31	X2	I ²	Crystal ceramic connect port for system clock OSC
32	GND		Ground
33	XT2	O	32.768KHz crystal connect port
34	XT1	I	32.768KHz crystal connect port
35	IN EXP STB	O	Strobe signal to Deck
36	ROTARY	O	Output port for rotary switching
37	COM DATA OUT	O	Serial data output port NVRAM, OUTPUT EXP
38	COM CLK	O	Serial clock output port
39	RESET	I	Reset input port (Normally : H, Reset : L)
40	G1	O	Digitron grid direct drive port
41	G2	O	Digitron grid direct drive port
42	G3	O	Digitron grid direct drive port
43	G4	O	Digitron grid direct drive port
44	G5	O	Digitron grid direct drive port
45	G6	O	Digitron grid direct drive port
46	G7	O	Digitron grid direct drive port
47	G8	O	Digitron grid direct drive port
48	G9	O	Digitron grid direct drive port
49	G10	O	Digitron grid direct drive port
50	G11	O	Digitron grid direct drive port
51	G12	O	Digitron grid direct drive port

PIN NO.	SIGNAL NAME	I/O	FUNCTION AND I/O LEVEL
52	G13	O	Digitron grid direct drive port
53	CM F/R	O	Output port for capstan motor rotation (FORWARD : "L")
54	NVRAM STB	O	Strobe signal to NVRAM
55	OSD STB	O	Strobe signal to OSD
56	V LOAD	I	Digitron drive voltage input port
57	V PRE	I	Ground
58	S10	O	Digitron grid direct drive port
59	S9	O	Digitron grid direct drive port
60	S8	O	Digitron grid direct drive port
61	S7	O	Digitron grid direct drive port
62	S6	O	Digitron grid direct drive port
63	S5	O	Digitron grid direct drive port
64	VDD	I	MICOM drive voltage

5-2. PROGRAM SWITCH TIMING CHART



POSITION	CAM SW				MODE
	A	B	C	D	
EJECT	0	0	0	1	EJECT
UN-LOAD	1	0	0	1	UN-LOAD
R. PS	1	1	1	0	R. PS, Z-R. PS
R. SLOW	1	1	0	0	R. SLOW
STILL	0	1	0	0	STILL, SLOW, F/ADV
PLAY	0	1	1	0	T-STOP, PLAY, REC, REC-PAUSE, F. PS, Z-F. PS
STOP	0	0	1	0	STOP, POWER OFF (CASS-IN)
FF/REW	0	0	1	1	FF, REW

6. REPLACEMENT PARTS LIST

6-1. GENERAL INFORMATION

1. Parts Replacement

Many electrical mechanical parts in Video Cassette Recorder (Player) have special safety-related characteristics. These characteristics are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by  in the replacement parts lists and schematic diagrams. The use of a replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

2. Unless otherwise specified :

1) All resistors are in ohms (Ω)

- K = 1,000
- M = 1,000K

- * RD : 1/8W, $\pm$ 5% Carbon
- * RM : 1/4W, $\pm$ 5% Metal-film

2) All capacitors are in $\pm$ 10%, MF = μ F.

- * CC : PF = μ F, Ceramic, Temp
- * CK : PK = μ F, Ceramic, MK
- * CS : Tantalum
- * CQ : Polyester
- * CE : Electrolytic

3) All coils are in microhenry (μ H)

- 1mH = 1,000 μ H

3. ASS'Y = Assembly

4. P.W.B = Printed Wiring Board.

5. Mark : Safety related parts.

6. How to order replacement parts

To have your order filed promptly and correctly, please furnish the following informations.

- 1) Mode Number
- 2) Location Number
- 3) Part Number
- 4) Description & Specification

7. P.W.B Assembly is not replacement item.

6-2. ELECTRICAL REPLACEMENT PARTS LIST

LOCAL NO	PART NUMBER	DESCRIPTION/SPECIFICATION
----------	-------------	---------------------------

660	69098-225-500	REGULATOR ASSY;X3 230V CP2
-----	---------------	----------------------------

	63053-811-221	POWER CORD ASSY;KLCE-2F CP-2
BD01	62169-403-562	DIODE-STACK;RBV402/D3SBA20
BD02	62169-403-562	DIODE-STACK;RBV402/D3SBA20
C01	61409-601-320	C-CERAMIC;ECK-DNS 472ME
C02	61639-506-332	C-ELEC;CEAP 35V 3300M SG(18X36.5)
C03	61417-109-210	C-CERAMIC;HK;CK45F TAPG 50V 104-Z
C04	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C05	61639-506-332	C-ELEC;CEAP 35V 3300M SG(18X36.5)
C06	61639-904-472	C-ELEC;LC-1628-4700-16-M
C08	61639-904-332	C-ELEC;LC-1325-3300-16-M
CN100	63349-062-590	CONNECTOR-WAFER;5268-10A
D01	62169-406-482	DIODE;1N4148 SAMSUNG
D02	62169-403-789	DIODE-ZENER;MTZ5.6C TAPG
D03	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
F01	64709-085-130	FUSE;T315mA 250V 218 LF
F02	64709-085-140	FUSE;T2A 250V 218 LF
F03	64709-085-040	FUSE;T1.6A 250V 218 5X20MM LT EUR
IC01	62119-113-012	IC;MC7815C
IC02	62119-401-313	IC;PQ12RF11
L01	62429-014-115	LINE-FILTER;HL38
PT1101	A1199-0024	POWER TRANS;EI 66X24 230V 50HZ
Q01	62139-301-308	TRANSISTOR;2SD 1944/2SD1273
R01	61048-327-271	R-METAL FILM;RS 1/2P 270-J TAPG

69099-619-107	REMOCON ASSY;VK-2380/3261(LCD)
---------------	--------------------------------

	67843-610-200	DOOR-BATTERY;ABS 94HB
CT01	61617-408-229	C-ELEC;CEAP 50V 2.2M RSS(4X7)
CT02	61607-421-130	C-ELECTROLYTIC;LC-0511-47-16-M TAPG
CT03	61407-117-101	C-CERAMIC;AXIAL;UP050F 104Z
CT04	61407-117-101	C-CERAMIC;AXIAL;UP050F 104Z
CT05	61407-117-101	C-CERAMIC;AXIAL;UP050F 104Z
CT06	61407-105-650	C-CERAMIC;TEMP;CC45 CH TAPG 50V 8-D
CT07	61407-117-101	C-CERAMIC;AXIAL;UP050F 104Z
DT02	62169-406-482	DIODE;1N4148 SAMSUNG
ICT01	62119-103-723	IC;LC5864H-1277
ICT02	62119-401-385	IC;74HC08 SMT TYPE
LCD1	62309-109-030	LCD;CG434-TS
LT01	62309-112-036	LED-IR;CL2
LT02	62309-112-036	LED-IR;CL2
QT01	62137-702-020	TRANSISTOR;KSC 1008-Y TAPG
RT01	61048-177-271	R-METAL FILM;RM 1/8TS 270-J
RT02	61048-177-109	R-METAL FILM;RM 1/8TS 1-J
RT03	61048-177-303	R-METAL FILM;RM 1/8TS 30K-J
XT01	64539-012-528	CRYSTAL;38.2294KHZ

69099-618-131	REMOCON ASSY;VK-3230/3231(NOT LCD)
---------------	------------------------------------

	67843-609-010	BATTERY-COVER;ABS 94HB NR1844
CT01	61637-202-470	C-ELEC;CEAP 8.3V 47M SA(5X11)
CT02	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
CT03	61407-101-360	C-CERAMIC;TEMP;CC45 SL TAPG 50V 100-J
CT04	61407-101-360	C-CERAMIC;TEMP;CC45 SL TAPG 50V 100-J
DT01	62169-406-482	DIODE;1N4148 SAMSUNG
DT02	62169-406-482	DIODE;1N4148 SAMSUNG
DT03	62169-406-482	DIODE;1N4148 SAMSUNG
DT04	62169-406-482	DIODE;1N4148 SAMSUNG
DT05	62169-406-482	DIODE;1N4148 SAMSUNG
DT06	62169-406-482	DIODE;1N4148 SAMSUNG
DT07	62169-406-482	DIODE;1N4148 SAMSUNG
DT08	62169-406-482	DIODE;1N4148 SAMSUNG
ICT01	62119-401-327	IC;KS 51900-11
LT01	62309-112-036	LED-IR;CL2
QT01	62137-702-020	TRANSISTOR;KSC 1008-Y TAPG
RT01	61048-177-109	R-METAL FILM;RM 1/8TS 1-J
XT01	64539-102-311	CERAMIC RESONATOR;CSB 455 EBL

LOCAL NO	PART NUMBER	DESCRIPTION/SPECIFICATION
----------	-------------	---------------------------

670	69271-302-218	ASSY F/TIMER(0);X-3 PAL(VK-3260/VK-3230)
-----	---------------	--

C701	61607-421-130	C-ELECTROLYTIC;LC-0511-47-16-M TAPG
C702	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C703	61417-109-040	C-CERAMIC;HK;CK45F TAPG 60V 102-Z
C704	61407-105-320	C-CERAMIC;TEMP;CC45 CH TAPG 50V 82-J
C705	61417-109-040	C-CERAMIC;HK;CK45F TAPG 60V 102-Z
CN701	B6010-0159	CONNECTOR-WAFER;5082-3110-20
CN702	B6010-0159	CONNECTOR-WAFER;5082-3110-20
CN703	63348-232-110	CONNECTOR-WAFER;52147-1110
CN704	63054-611-030	FLAT-CABLE;2780 #26 2.0C-11P-30m/m
CN705	63053-403-443	LEAD CONNECTOR ASSY;1533 #26 5395-5264
D701	62169-406-482	DIODE;1N4148 SAMSUNG
D702	62169-406-482	DIODE;1N4148 SAMSUNG
D703	62169-406-482	DIODE;1N4148 SAMSUNG
D704	62169-406-482	DIODE;1N4148 SAMSUNG
D705	62169-406-482	DIODE;1N4148 SAMSUNG
D706	62169-406-482	DIODE;1N4148 SAMSUNG
D707	62169-406-482	DIODE;1N4148 SAMSUNG
D708	62169-406-482	DIODE;1N4148 SAMSUNG
D709	62169-406-482	DIODE;1N4148 SAMSUNG
D710	62169-406-482	DIODE;1N4148 SAMSUNG
D714	62169-406-482	DIODE;1N4148 SAMSUNG
D715	62169-406-482	DIODE;1N4148 SAMSUNG
DT701	A4153-0009	VF-DISPLAY;SVV-13SS01
J701	A3040-0004	JACK PIN;DSP-8805-03(YEL)
J702	A3040-0003	JACK PIN;DSP-8805-03(WHT)
Q701	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q702	62137-701-020	TRANSISTOR;KSR 2001 TAPG
R701	61048-177-154	R-METAL FILM;RM 1/8TS 150K-J
R702	61048-177-154	R-METAL FILM;RM 1/8TS 150K-J
R703	61048-177-154	R-METAL FILM;RM 1/8TS 150K-J
R704	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R705	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R706	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J
R709	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
RM701	64529-312-041	REMOCON-MODULE;SBX1610-82
SW701	63599-016-070	SW-TACT;EVQ-QS2 05K
SW702	63599-016-070	SW-TACT;EVQ-QS2 05K
SW703	63599-016-070	SW-TACT;EVQ-QS2 05K
SW704	63599-016-070	SW-TACT;EVQ-QS2 05K
SW705	63599-016-070	SW-TACT;EVQ-QS2 05K
SW706	63599-016-070	SW-TACT;EVQ-QS2 05K
SW707	63599-016-070	SW-TACT;EVQ-QS2 05K
SW708	63599-016-070	SW-TACT;EVQ-QS2 05K
SW709	63599-016-070	SW-TACT;EVQ-QS2 05K
SW710	63599-016-070	SW-TACT;EVQ-QS2 05K
SW711	63599-016-070	SW-TACT;EVQ-QS2 05K
SW712	63599-016-070	SW-TACT;EVQ-QS2 05K
SW713	63599-016-070	SW-TACT;EVQ-QS2 05K
SW714	63599-016-070	SW-TACT;EVQ-QS2 05K
SW715	63599-016-070	SW-TACT;EVQ-QS2 05K
SW716	63599-016-070	SW-TACT;EVQ-QS2 05K
SW717	63599-016-070	SW-TACT;EVQ-QS2 05K
SW718	63519-102-071	SW-SLIDE;KSA 2340A/T0023002-3
VR701	61203-107-110	VR ROUND;RK09K1130/RH0102SQ 20KB

LOCA NO	PART NUMBER	DESCRIPTION SPECIFICATION
---------	-------------	---------------------------

600	ASSY MAIN;X-3 PAL 2H'D	
-----	------------------------	--

POWER PARTS

C108	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C110	61637-511-470	C-ELEC;CEAP 100V 47M SG(10X12.5)
C111	61637-511-470	C-ELEC;CEAP 100V 47M SG(10X12.5)
C113	61637-208-220	C-ELEC;CEAP 50V 22M SA(6X11)
C114	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C116	61637-504-101	C-ELEC;CEAP 16V 100M SG(6.3X11)
C117	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C118	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C119	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C120	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C121	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
CN101	63053-110-135	LEAD CONNECTOR ASSY;1061 #26 5264 5295-10
D105	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
D106	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
D107	62169-406-482	DIODE;1N4148 SAMSUNG
D108	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
D109	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
D110	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
IC101	62119-501-561	IC-L;KA33V TAPG
Q101	62137-302-441	TRANSISTOR;KSC 2328-Y TAPG
Q102	62147-401-835	TRANSISTOR;KSA 928A-Y TAPG
Q103	62137-701-010	TRANSISTOR;KSR 1001 TAPG
Q104	62147-101-950	TRANSISTOR;KSA 643-Y TAPG
Q105	62137-701-011	TRANSISTOR;KSR 1002 TAPG
Q106	62137-701-022	TRANSISTOR;KSR 2003 TAPG
Q107	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q108	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q109	62137-701-022	TRANSISTOR;KSR 2003 TAPG
R101	61079-919-561	M-CHIP RES G;QR RD 2A 2BY 560-J
R102	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R103	61079-919-473	M-CHIP RES G;QR RD 2A 2BY 47K-J
R104	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R105	61079-919-303	M-CHIP RES G;QR RD 2A 2BY 30K-J
R106	61079-919-101	M-CHIP RES G;QR RD 2A 2BY 100-J
R107	61079-919-101	M-CHIP RES G;QR RD 2A 2BY 100-J
R108	61048-277-102	R-METAL FILM;RM 1/4T 1K-J
R110	61048-277-102	R-METAL FILM;RM 1/4T 1K-J
R112	61079-919-473	M-CHIP RES G;QR RD 2A 2BY 47K-J
R114	61048-277-821	R-METAL FILM;RM 1/4T 820-J
R115	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R116	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
ZD101	62169-403-821	DIODE-ZENER;MTZ 5.1B
ZD102	62169-403-832	DIODE-ZENER;UZ 3.6B
ZD103	62169-403-838	DIODE-ZENER;MTZ27C

SYSTEM CONTROL PARTS

C601	61454-239-120	M-CHIP CAP;RL UX 050 SL 12-J
C602	61454-239-240	M-CHIP CAP;RL UX 050 SL 24-J
C603	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C604	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C605	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C607	61637-504-101	C-ELEC;CEAP 16V 100M SG(6.3X11)
C608	61637-502-102	C-ELEC;CEAP 6.3V 1000M SG(10X16)
C609	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C610	61407-117-101	C-CERAMIC;AXIAL;UP050F 104Z
C612	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C613	61637-504-101	C-ELEC;CEAP 16V 100M SG(6.3X11)
C614	61607-421-130	C-ELECTROLYTIC;LC-0511-47-16-M TAPG
C615	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C616	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C617	61507-121-481	C-POLYESTER;CQ921M TAPG 50V 153-J
C618	61507-121-450	C-POLYESTER;CQ921M TAPG 50V 682-K
C619	61454-239-470	M-CHIP CAP;RL UX 050 SL 47-J
C620	61454-239-470	M-CHIP CAP;RL UX 050 SL 47-J
C621	61507-121-571	C-POLYESTER;CQ921M TAPG 100V 683-J
C622	61637-204-220	C-ELEC;CEAP 16V 22M SA
CN601	B6010-0211	CONNECTOR-WAFER;5082-3010-20
CN602	B6010-0211	CONNECTOR-WAFER;5082-3010-20

LOCA NO	PART NUMBER	DESCRIPTION SPECIFICATION
---------	-------------	---------------------------

D601	62169-406-482	DIODE;1N4148 SAMSUNG
D602	62169-406-482	DIODE;1N4148 SAMSUNG
D603	62169-406-482	DIODE;1N4148 SAMSUNG
D604	62169-406-482	DIODE;1N4148 SAMSUNG
IC601	67199-0115-00	MICOM;UPD75216ACW V2 DIP
IC602	62119-401-314	IC;KIA7033P
IC603	62119-401-186	IC;KM93C46
IC604	62119-401-300	IC;KA8301(N.M)
IC605	62119-101-770	IC;TC4094BP/CD4094BCN
IC606	62119-101-770	IC;TC4094BP/CD4094BCN
IC607	62119-401-872	IC;LM393(N.M)
IC608	62119-401-314	IC;KIA7033P
L601	62427-812-109	COIL-PEAKING;EL0606RA 1uH-K
L602	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
Q602	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q603	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q604	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q605	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
R601	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R602	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R603	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R604	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R605	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R606	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R607	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R608	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R609	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R610	61079-919-104	M-CHIP RES G;QR RD 2A 2BY 100K-J
R611	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R612	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R613	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R614	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R615	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R616	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R617	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R618	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R619	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J
R620	61079-919-334	M-CHIP RES G;QR RD 2A 2BY 330K-J
R621	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R623	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R624	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R625	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R628	61079-919-182	M-CHIP RES G;QR RD 2A 2BY 1.8K-J
R629	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R631	61048-177-511	R-METAL FILM;RM 1/8TS 510-J
R633	61048-177-683	R-METAL FILM;RM 1/8TS 68K-J
R634	61048-177-330	R-METAL FILM;RM 1/8TS 33-J
R635	61079-919-473	M-CHIP RES G;QR RD 2A 2BY 47K-J
R636	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R637	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R638	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R639	61048-177-682	R-METAL FILM;RM 1/8TS 6.8K-J
R640	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R641	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R642	61049-429-338	R-METAL OXIDE;RS 2P 3.3J
R643	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J
R644	61048-177-513	R-METAL FILM;RM 1/8TS 51K-J
R645	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R646	61079-919-104	M-CHIP RES G;QR RD 2A 2BY 100K-J
R647	61079-919-104	M-CHIP RES G;QR RD 2A 2BY 100K-J
R648	61079-919-622	M-CHIP RES G;QR RD 2A 2BY 6.2K-J
R649	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R661	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R663	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J
R664	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J
R665	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J
R666	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R669	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R670	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R671	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R672	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R673	61079-919-222	M-CHIP RES G;QR RD 2A 2BY 2.2K-J
R674	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)

LOC# NO	PART NUMBER	DESCRIPTION SPECIFICATION
R675	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R676	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
XT601	64539-102-044	CERAMIC-RESONATOR;FCR 4.19MC
XT602	64539-021-010	CRYSTAL;P-3(32.768KHZ)

SERVO PARTS

C201	61454-239-107	M-CHIP CAP;RL UX 050 B 0.001-K
C202	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C203	61454-239-107	M-CHIP CAP;RL UX 050 B 0.001-K
C206	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C207	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C208	61507-121-550	C-POLYESTER;CQ921M TAPG 50V 473-K
C209	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C210	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C211	61507-121-550	C-POLYESTER;CQ921M TAPG 50V 473-K
C212	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C213	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C214	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C215	61507-121-340	C-POLYESTER;CQ921M TAPG 100V 102-K
C216	A1102-0149	C-FILM;CF 922 P 100V T 224-J /C-M 365 26224/3E
C217	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C218	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C219	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C221	61507-121-510	C-POLYESTER;CQ921M TAPG 100V 223-K
C222	61617-408-479	C-ELEC;CEAP 50V 4.7M RSS(4X7)
C223	A1102-0148	C-FILM;CF 922 P 100V T 104-J /C-M 365 26104/3E
C224	61454-239-181	M-CHIP CAP;RL UX 050 B 181-K
C225	61637-204-220	C-ELEC;CEAP 16V 22M SA
C226	61637-204-220	C-ELEC;CEAP 16V 22M SA
C227	61454-239-107	M-CHIP CAP;RL UX 050 B 0.001-K
C233	61417-109-040	C-CERAMIC;HK;CK45F TAPG 50V 102-Z
C234	61417-109-040	C-CERAMIC;HK;CK45F TAPG 50V 102-Z
C235	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C238	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C239	61637-504-101	C-ELEC;CEAP 16V 100M SQ(6.3X11)
C240	61454-239-107	M-CHIP CAP;RL UX 050 B 0.001-K
CN201	63348-231-220	CONNECTOR WAFER;52045-2210
D201	62169-406-482	DIODE;1N4148 SAMSUNG
D202	62169-406-482	DIODE;1N4148 SAMSUNG
D204	62169-406-482	DIODE;1N4148 SAMSUNG
D205	62169-406-482	DIODE;1N4148 SAMSUNG
D206	62169-406-482	DIODE;1N4148 SAMSUNG
IC201	62119-401-862	IC;HD49748NT
IC202	62119-501-572	IC-LINEAR;LM358S(N.M)
L201	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
L202	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
Q205	62137-701-012	TRANSISTOR;KSR 1003 TAPG
R201	61079-919-563	M-CHIP RES G;QR RD 2A 2BY 56K-J
R202	61079-919-823	M-CHIP RES G;QR RD 2A 2BY 82K-J
R203	61079-919-104	M-CHIP RES G;QR RD 2A 2BY 100K-J
R204	61079-919-104	M-CHIP RES G;QR RD 2A 2BY 100K-J
R206	61048-177-272	R-METAL FILM;RM 1/8TS 2.7K-J
R208	61079-919-512	M-CHIP RES G;QR RD 2A 2BY 5.1K-J
R209	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R212	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R213	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J
R214	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R215	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J
R216	61079-919-562	M-CHIP RES G;QR RD 2A 2BY 5.6K-J
R217	61079-919-224	M-CHIP RES G;QR RD 2A 2BY 220K-J
R218	61079-919-105	M-CHIP RES G;QR RD 2A 2BY 1M-J
R219	61048-177-912	R-METAL FILM;RM 1/8TS 9.1K
R220	61048-177-334	R-METAL FILM;RM 1/8TS 330K-J
R221	61079-919-105	M-CHIP RES G;QR RD 2A 2BY 1M-J
R222	61079-919-883	M-CHIP RES G;QR RD 2A 2BY 68K-J
R223	61079-919-302	M-CHIP RES G;QR RD 2A 2BY 3K-J
R224	61079-919-393	M-CHIP RES G;QR RD 2A 2BY 39K-J
R225	61079-919-105	M-CHIP RES G;QR RD 2A 2BY 1M-J
R226	61079-919-564	M-CHIP RES G;QR RD 2A 2BY 560K-J
R227	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J
R228	61079-919-473	M-CHIP RES G;QR RD 2A 2BY 47K-J
R229	61079-919-105	M-CHIP RES G;QR RD 2A 2BY 1M-J

R230	61079-919-183	M-CHIP RES G;QR RD 2A 2BY 18K-J
R231	61079-919-823	M-CHIP RES G;QR RD 2A 2BY 82K-J
R232	61079-919-154	M-CHIP RES G;QR RD 2A 2BY 150K-J
R233	61079-919-474	M-CHIP RES G;QR RD 2A 2BY 470K-J
R234	61079-919-224	M-CHIP RES G;QR RD 2A 2BY 220K-J
R235	61079-919-124	M-CHIP RES G;QR RD 2A 2BY 120K-J
R236	61048-177-822	R-METAL FILM;RM 1/8TS 8.2K-J
R237	61048-177-224	R-METAL FILM;RM 1/8TS 220K-J
R238	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R239	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J
R240	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J
R241	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R242	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R249	61079-919-104	M-CHIP RES G;QR RD 2A 2BY 100K-J
R250	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R251	61079-919-105	M-CHIP RES G;QR RD 2A 2BY 1M-J
R252	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R253	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R254	61079-919-471	M-CHIP RES G;QR RD 2A 2BY 470-J
R255	61079-919-471	M-CHIP RES G;QR RD 2A 2BY 470-J
R258	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R261	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
VR201	61247-101-104	VR-SEMI;EVN-DJA A03 B15 TAPG 100KB

VIDEO PARTS

C3201	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C3202	61617-408-479	C-ELEC;CEAP 50V 4.7M RSS(4X7)
C3203	61407-101-482	C-CERAMIC;TEMP;CC45 SL TAPG 50V 75-J
C3204	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C3205	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C3206	61507-121-550	C-POLYESTER;CQ921M TAPG 50V 473-K
C3207	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C3208	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C3209	61637-608-338	C-ELEC;CEAP 50V 0.33M SV(5X9)
C3210	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C3211	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C3212	61407-117-101	C-CERAMIC;AXIAL;UP050F 104Z
C3213	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C3214	61454-239-100	M-CHIP CAP;RL UX 050 SL 10-J
C3215	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C3216	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K
C3217	61454-239-394	M-CHIP CAP;RL UX 050 B 390-K
C3218	61627-208-010	C-ELEC;CEAP 50V 1M NP(6X11)
C3219	61454-239-560	M-CHIP CAP;RL UX 050 SL 56-J
C3220	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K
C3221	61454-239-101	M-CHIP CAP;RL UX 050 SL 100-J
C3222	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C3223	61454-239-390	M-CHIP CAP;RL UX 050 SL 50V 39-J
C3224	61454-239-181	M-CHIP CAP;RL UX 050 B 181-K
C3225	61407-117-228	C-CERAMIC;AXIAL;CAX SL TAPG 50V 223-Z
C3226	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C3227	61454-239-479	M-CHIP CAP;RL UX 050 SL 477-K
C3228	61407-117-228	C-CERAMIC;AXIAL;CAX SL TAPG 50V 223-Z
C3229	61507-121-550	C-POLYESTER;CQ921M TAPG 50V 473-K
C3230	61637-208-339	C-ELEC;CEAP 50V 3.3M SA(5X11)
C3231	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C3232	61507-121-571	C-POLYESTER;CQ921M TAPG 100V 683-J
C3234	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C3235	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C3236	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C3237	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C3238	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C3239	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C3240	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C3241	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C3242	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K
C3247	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C3255	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C3256	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C3257	61454-239-101	M-CHIP CAP;RL UX 050 SL 100-J
C3258	61454-239-330	M-CHIP CAP;RL UX 050 SL 33-J
C3299	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K

LOCA NO	PART NUMBER	DESCRIPTION SPECIFICATION
C3501	61407-117-104	C-CERAMIC AXIAL; CAX Y TAPG 16V 0.01-N
C3502	61637-804-330	C-ELEC; CEAP 16V 33M SE(5X5)
C3503	61637-205-470	C-ELEC; CEAP 25V 47M SA(6X11)
C3504	61454-239-103	M-CHIP CAP; RL EX 050 Y 103N
C3505	61637-204-330	C-ELEC; CEAP 16V 33M SA(5X11)
C3506	61407-117-104	C-CERAMIC AXIAL; CAX Y TAPG 16V 0.01-N
C3640	61407-117-104	C-CERAMIC AXIAL; CAX Y TAPG 16V 0.01-N
CF3201	64569-006-011	DELAY LINE; MS-31PC-5K
CN3103	63053-211-130	LEAD CONNECTOR ASSY; 1429#26 5295-51004
D3101	62169-406-482	DIODE; 1N4148 SAMSUNG
D3201	62169-406-482	DIODE; 1N4148 SAMSUNG
D3204	62169-406-482	DIODE; 1N4148 SAMSUNG
D3501	62169-406-482	DIODE; 1N4148 SAMSUNG
D3603	62169-406-482	DIODE; 1N4148 SAMSUNG
FL3501	64527-310-010	FILTER CERAMIC; SFE4.5MB TAPG
IC3201	B4008-0884	IC; LA7397 DIP
IC3202	B4008-0432	IC; MSM 7403RS SIP
IC3501	A4008-0035	IC; BA7025L SIP
L3201	62429-833-101	COIL-PEAKING AXIAL; BAL04ST 101K
L3202	62427-812-680	COIL-PEAKING; EL0606RA 68uH-J
L3203	62427-812-339	COIL-PEAKING; EL0606RA 3.3uH-J
L3206	62427-812-330	COIL-PEAKING; EL0606RA 33uH-J
L3207	62427-812-150	COIL-PEAKING; EL0606RA 15uH-J
L3208	62429-833-101	COIL-PEAKING AXIAL; BAL04ST 101K
L3209	62429-833-101	COIL-PEAKING AXIAL; BAL04ST 101K
L3212	62427-812-820	COIL-PEAKING; EL0606RA 82uH-J
L3299	62427-812-100	COIL-PEAKING; EL0606RA 10uH-J
L3501	62429-833-101	COIL-PEAKING AXIAL; BAL04ST 101K
Q3201	62137-302-740	TRANSISTOR; KSC 945-Y TAPG
Q3202	62137-103-380	TRANSISTOR; KSA 733-Y TAPG
Q3203	62137-302-740	TRANSISTOR; KSC 945-Y TAPG
Q3204	62137-103-380	TRANSISTOR; KSA 733-Y TAPG
Q3205	62137-701-013	TRANSISTOR; KSR 1004 TAPG
Q3206	62137-103-380	TRANSISTOR; KSA 733-Y TAPG
Q3207	62137-302-740	TRANSISTOR; KSC 945-Y TAPG
Q3209	62137-302-740	TRANSISTOR; KSC 945-Y TAPG
Q3210	62137-103-380	TRANSISTOR; KSA 733-Y TAPG
Q3211	62137-302-740	TRANSISTOR; KSC 945-Y TAPG
Q3215	62137-701-013	TRANSISTOR; KSR 1004 TAPG
Q3216	62137-701-020	TRANSISTOR; KSR 2001 TAPG
Q3501	62137-302-740	TRANSISTOR; KSC 945-Y TAPG
Q3607	62137-302-740	TRANSISTOR; KSC 945-Y TAPG
Q3608	62137-701-020	TRANSISTOR; KSR 2001 TAPG
Q3609	62137-701-020	TRANSISTOR; KSR 2001 TAPG
Q3698	62137-701-013	TRANSISTOR; KSR 1004 TAPG
Q3699	62137-701-020	TRANSISTOR; KSR 2001 TAPG
R3201	61079-919-102	M-CHIP RES G; QR RD 2A 2BY 1K-J
R3202	61079-919-271	M-CHIP RES G; QR RD 2A 2BY 270-J
R3203	61079-919-222	M-CHIP RES G; QR RD 2A 2BY 2.2K-J
R3204	61079-919-472	M-CHIP RES G; QR RD 2A 2BY 4.7K-J
R3206	61079-919-822	M-CHIP RES G; QR RD 2A 2BY 8.2K-J
R3207	61079-919-222	M-CHIP RES G; QR RD 2A 2BY 2.2K-J
R3208	61079-919-222	M-CHIP RES G; QR RD 2A 2BY 2.2K-J
R3209	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3210	61079-919-272	M-CHIP RES G; QR RD 2A 2BY 2.7K-J
R3211	61079-919-621	M-CHIP RES G; QR RD 2A 2BY 620-J
R3212	61079-919-102	M-CHIP RES G; QR RD 2A 2BY 1K-J
R3213	61048-177-222	R-METAL FILM; RM 1/8TS 2.2K-J
R3214	61048-177-102	R-METAL FILM; RM 1/8TS 1K-J
R3215	61048-177-472	R-METAL FILM; RM 1/8TS 4.7K-J
R3216	61079-919-122	M-CHIP RES G; QR RD 2A 2BY 1.2K-J
R3217	61079-919-182	M-CHIP RES G; QR RD 2A 2BY 1.8K-J
R3218	61079-919-511	M-CHIP RES G; QR RD 2A 2BY 510-J
R3219	61048-177-332	R-METAL FILM; RM 1/8TS 3.3K-J
R3221	61079-919-102	M-CHIP RES G; QR RD 2A 2BY 1K-J
R3222	61079-919-271	M-CHIP RES G; QR RD 2A 2BY 270-J
R3223	61079-919-102	M-CHIP RES G; QR RD 2A 2BY 1K-J
R3224	61079-919-332	M-CHIP RES G; QR RD 2A 2BY 3.3K-J
R3225	61079-919-222	M-CHIP RES G; QR RD 2A 2BY 2.2K-J
R3227	61079-919-103	M-CHIP RES G; QR RD 2A 2BY 10K-J
R3228	61079-919-202	M-CHIP RES G; QR RD 2A 2BY 2K-J
R3230	61079-919-223	M-CHIP RES G; QR RD 2A 2BY 22K-J
R3231	61079-919-103	M-CHIP RES G; QR RD 2A 2BY 10K-J

LOCA NO	PART NUMBER	DESCRIPTION SPECIFICATION
R3232	61048-177-182	R-METAL FILM; RM 1/8TS 1.8K-J
R3234	61079-919-105	M-CHIP RES G; QR RD 2A 2BY 1M-J
R3236	61079-919-152	M-CHIP RES G; QR RD 2A 2BY 1.5K-J
R3240	61048-177-222	R-METAL FILM; RM 1/8TS 2.2K-J
R3241	61079-919-102	M-CHIP RES G; QR RD 2A 2BY 1K-J
R3242	61079-919-221	M-CHIP RES G; QR RD 2A 2BY 220-J
R3243	61079-919-823	M-CHIP RES G; QR RD 2A 2BY 82K-J
R3244	61048-177-273	R-METAL FILM; RM 1/8TS 27K-J
R3249	61079-919-122	M-CHIP RES G; QR RD 2A 2BY 1.2K-J
R3250	61079-919-102	M-CHIP RES G; QR RD 2A 2BY 1K-J
R3255	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3260	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3261	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3263	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3264	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3268	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3274	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3276	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3280	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3281	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3282	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3283	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3285	61048-177-622	R-METAL FILM; RM 1/8TS 6.2K-J
R3501	61048-177-153	R-METAL FILM; RM 1/8TS 15K-J
R3502	61079-919-562	M-CHIP RES G; QR RD 2A 2BY 5.6K-J
R3503	61079-919-103	M-CHIP RES G; QR RD 2A 2BY 10K-J
R3504	61048-177-223	R-METAL FILM; RM 1/8TS 22K-J
R3505	61079-919-154	M-CHIP RES G; QR RD 2A 2BY 150K-J
R3506	61079-919-152	M-CHIP RES G; QR RD 2A 2BY 1.5K-J
R3507	61079-919-222	M-CHIP RES G; QR RD 2A 2BY 2.2K-J
R3508	61048-177-103	R-METAL FILM; RM 1/8TS 10K-J
R3510	61079-919-102	M-CHIP RES G; QR RD 2A 2BY 1K-J
R3511	61048-177-103	R-METAL FILM; RM 1/8TS 10K-J
R3640	61079-919-333	M-CHIP RES G; QR RD 2A 2BY 33K-J
R3641	61079-919-333	M-CHIP RES G; QR RD 2A 2BY 33K-J
R3650	61079-919-000	M-CHIP RES G; QR RD 2A 2BY 0A-J(JUMPER)
R3699	61048-177-223	R-METAL FILM; RM 1/8TS 22K-J
T3501	62429-014-112	COIL-TRAP(1/2FH); 7.8K TUNING-COIL
VR3203	61247-101-103	VR-SEMI; EVN-DJA A03 B14 TAPG 10KB
VR3204	61247-101-472	VR-SEMI; EVN-DJA A03 BQ3 TAPG 4.7KB
VR3205	61247-101-103	VR-SEMI; EVN-DJA A03 B14 TAPG 10KB
VR3206	61247-101-103	VR-SEMI; EVN-DJA A03 B14 TAPG 10KB
X3201	64539-012-079	X-TAL; 4.43 3619MHZ 8PPM TAPG

AUDIO PARTS

C501	61637-208-010	C-ELEC; CEAP 50V 1M SA(5X11)
C502	61454-239-221	M-CHIP CAP; RL UX 050 B 220-J
C503	61507-339-010	C-POLYESTER; MDX 100V TAPG 473-K
C504	61637-205-470	C-ELEC; CEAP 25V 47M SA(6X11)
C505	61507-121-630	C-POLYESTER; CQ921M TAPG 100V 123-K
C506	61507-121-430	C-POLYESTER; CQ921M TAPG 100V 472-K
C507	61507-121-450	C-POLYESTER; CQ921M TAPG 50V 682-K
C508	61507-121-341	C-POLYESTER; CQ921M TAPG 100V 222-K
C509	61507-121-390	C-POLYESTER; CQ921M TAPG 100V 222-K
C511	61637-204-330	C-ELEC; CEAP 16V 33M SA(5X11)
C512	61507-121-470	C-POLYESTER; CQ921M TAPG 100V 103-K
C513	61637-208-019	C-ELEC; CEAP 50V 0.1M SA(5X11)
C514	61637-804-220	C-ELEC; CEAP 16V 22M SE(5X5)
C515	61637-208-019	C-ELEC; CEAP 50V 0.1M SA(5X11)
C518	61507-121-491	C-POLYESTER; CQ921M TAPG 50V 183-J
C519	61507-121-460	C-POLYESTER; CQ921M TAPG 100V 822-K
C520	61507-121-450	C-POLYESTER; CQ921M TAPG 50V 682-K
C521	61637-208-100	C-ELEC; CEAP 35V 10M SA(5X11)
C522	61507-121-520	C-POLYESTER; CQ921M TAPG 50V 273-K
C523	61507-121-470	C-POLYESTER; CQ921M TAPG 100V 103-K
C524	61617-408-479	C-ELEC; CEAP 50V 4.7M RSS(4X7)
C525	61637-804-220	C-ELEC; CEAP 16V 22M SE(5X5)
C526	61637-504-101	C-ELEC; CEAP 16V 100M SG(6.3X11)
CN501	63053-917-534	LEAD CONNECTOR ASSY; 1533 #26 5264-5264
D501	62169-406-482	DIODE; 1N4148 SAMSUNG
FL501	62429-014-138	COIL-BIAS OSC; 2690N-K5022YCT
IC501	62119-103-731	IC; LA7282(AUDIO)

LOC/NO	PART NUMBER	DESCRIPTION/SPECIFICATION
--------	-------------	---------------------------

L501	62427-813-153	COIL-PEAKING;EL0607RA 15mH-J
L502	62427-813-153	COIL-PEAKING;EL0607RA 15mH-J
L503	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
Q501	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q502	62147-401-850	TRANSISTOR;DTA 143ES TAPG
Q503	62137-702-020	TRANSISTOR;KSC 1008-Y TAPG
Q504	62137-701-013	TRANSISTOR;KSH 1004 TAPG
R501	61079-919-303	M-CHIP RES G;QR RD 2A 2BY 30K-J
R502	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J
R503	61079-919-181	M-CHIP RES G;QR RD 2A 2BY 180-J
R504	61079-919-334	M-CHIP RES G;QR RD 2A 2BY 330K-J
R505	61079-919-123	M-CHIP RES G;QR RD 2A 2BY 12K-J
R506	61079-919-101	M-CHIP RES G;QR RD 2A 2BY 100-J
R507	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R508	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R509	61048-177-225	R-METAL FILM;RM 1/8TS 2.2M-J
R510	61079-919-203	M-CHIP RES G;QR RD 2A 2BY 20K-J
R511	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J
R512	61079-919-303	M-CHIP RES G;QR RD 2A 2BY 30K-J
R513	61079-919-203	M-CHIP RES G;QR RD 2A 2BY 20K-J
R515	61048-177-821	R-METAL FILM;RM 1/8TS 820-J
R516	61079-919-183	M-CHIP RES G;QR RD 2A 2BY 18K-J
R517	61048-177-362	R-METAL FILM;RM 1/8TS 3.6K-J
R518	61079-919-681	M-CHIP RES G;QR RD 2A 2BY 680-J
R519	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R520	61079-919-223	M-CHIP RES G;QR RD 2A 2BY 22K-J
R521	61048-177-479	R-METAL FILM;RM 1/8TS 4.7-J
R522	61079-919-100	M-CHIP RES G;QR RD 2A 2BY 10-J
R523	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R525	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R526	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R527	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
VR501	61247-101-104	VR-SEMI;EVN-DJA A03 B15 TAPG 100KB

TUNER PARTS

	63054-401-821	COAXIAL-CABLE ASSY;7/0.16 300V BLK 180AA
	67189-0015-00	RF-CONVERTER;MCB9-UZ3609
	A1292-0008	TUNER;TECC2885 VA 14A
	A3040-0030	JACK-SCART;ABS 94HB+BSB T0.4
C401	A1102-0148	C-FILM;CF 922 P 100V T 104-J /C-M 365 26104/3E
C402	A1102-0148	C-FILM;CF 922 P 100V T 104-J /C-M 365 26104/3E
C403	A1102-0148	C-FILM;CF 922 P 100V T 104-J /C-M 365 26104/3E
C404	A1102-0148	C-FILM;CF 922 P 100V T 104-J /C-M 365 26104/3E
C405	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C406	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C407	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C408	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C409	61637-503-471	C-ELEC;CEAP 10V 470M SG(8X11.5)
C410	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K
C411	61454-239-821	M-CHIP CAP;RL UX 050 B 220-J
C412	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C413	61454-239-107	M-CHIP CAP;RL UX 050 B 0.001-K
C414	61637-208-229	C-ELEC;CEAP 50V 2.2M SA (5X11)
C415	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K
C416	61454-239-107	M-CHIP CAP;RL UX 050 B 0.001-K
C417	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C418	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C419	61617-408-479	C-ELEC;CEAP 50V 4.7M RSS(4X7)
C420	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K
C421	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C422	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C423	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C424	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K
C425	61637-504-101	C-ELEC;CEAP 16V 100M SG(6.3X11)
C426	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C427	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C428	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C429	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C431	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C432	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C433	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
CN404	63349-062-320	CONNECTOR-WAFER;5267-03A STICK

LOC/NO	PART NUMBER	DESCRIPTION/SPECIFICATION
--------	-------------	---------------------------

D401	62169-406-482	DIODE;1N4148 SAMSUNG
D402	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
IC401	62119-401-310	IC;KA8403
IC402	62119-401-310	IC;KA8403
IC403	62119-401-370	IC;LA7920
L401	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
L402	62427-812-180	COIL-PEAKING;EL0606RA 18uH-J
L405	62427-812-188	COIL PEAKING;EL0606RA 0.47uH-M
L406	62427-020-479	COIL PEAKING.AXIAL;LAL02TB 4R7J TAPG
Q401	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q402	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q403	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q404	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q405	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q406	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q409	62137-702-020	TRANSISTOR;KSC 1008-Y TAPG
Q410	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q411	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
R401	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R402	61079-919-223	M-CHIP RES G;QR RD 2A 2BY 22K-J
R403	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R404	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J
R405	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J
R406	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J
R407	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J
R408	61079-919-224	M-CHIP RES G;QR RD 2A 2BY 220K-J
R409	61079-919-683	M-CHIP RES G;QR RD 2A 2BY 68K-J
R410	61079-919-561	M-CHIP RES G;QR RD 2A 2BY 560-J
R411	61079-919-104	M-CHIP RES G;QR RD 2A 2BY 100K-J
R412	61079-919-561	M-CHIP RES G;QR RD 2A 2BY 560-J
R413	61079-919-105	M-CHIP RES G;QR RD 2A 2BY 1M-J
R414	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J
R415	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R416	61079-919-104	M-CHIP RES G;QR RD 2A 2BY 100K-J
R417	61079-919-151	M-CHIP RES G;QR RD 2A 2BY 150-J
R418	61079-919-680	M-CHIP RES G;QR RD 2A 2BY 68-J
R419	61079-919-750	M-CHIP RES G;QR RD 2A 2BY 75-J
R420	61079-919-471	M-CHIP RES G;QR RD 2A 2BY 470-J
R421	61079-919-471	M-CHIP RES G;QR RD 2A 2BY 470-J
R422	61079-919-471	M-CHIP RES G;QR RD 2A 2BY 470-J
R423	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R424	61079-919-471	M-CHIP RES G;QR RD 2A 2BY 470-J
R425	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R426	61079-919-561	M-CHIP RES G;QR RD 2A 2BY 560-J
R427	61079-919-222	M-CHIP RES G;QR RD 2A 2BY 2.2K-J
R428	61079-919-750	M-CHIP RES G;QR RD 2A 2BY 75-J
R429	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R430	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R431	61079-919-750	M-CHIP RES G;QR RD 2A 2BY 75-J
R434	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R435	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R437	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R439	61079-919-101	M-CHIP RES G;QR RD 2A 2BY 100-J
VR401	61247-101-103	VR-SEMI;EVN-DJA A03 B14 TAPG 10KB

LOC. NO	PART NUMBER	DESCRIPTION, SPECIFICATION
602	69252-302-202	ASSY OSD;X-3 PAL 4H'D(SST)

C901	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C902	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C903	61454-239-240	M-CHIP CAP;RL UX 050 SL 24-J
C904	61454-239-180	M-CHIP CAP;RL UX 050 SL 18-J
C905	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C906	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C907	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C908	61637-504-101	C-ELEC;CEAP 16V 100M SQ(6.3X11)
C909	61507-121-340	C-POLYESTER;CQ921M TAPG 100V 102-K
C910	61507-121-390	C-POLYESTER;CQ921M TAPG 100V 222-K
C911	61454-239-270	M-CHIP CAP;RL UX 050 SL 27-J
C912	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C913	61454-239-470	M-CHIP CAP;RL UX 050 SL 47-J
C914	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K
C915	61454-239-820	M-CHIP CAP;RL UX 050 B 82-K
C916	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C917	61617-408-478	C-ELEC;CEAP 50V 0.47M RSS(4X7)
C918	61507-121-511	C-POLYESTER;CQ921M TAPG 100V 223-J
C919	61637-504-101	C-ELEC;CEAP 16V 100M SQ(6.3X11)
C920	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C921	61617-408-479	C-ELEC;CEAP 50V 4.7M RSS(4X7)
C922	61637-205-470	C-ELEC;CEAP 25V 47M SA(6X11)
C923	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C924	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C927	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C928	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C929	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C930	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C931	61454-239-104	M-CHIP CAP;RL UX 050 B 100-K
CN902	63349-120-010	PIN-CONNECTOR(G7);MAIN TO SUB 7PIN
D901	62169-406-482	DIODE;1N4148 SAMSUNG
D902	62169-406-482	DIODE;1N4148 SAMSUNG
D903	62169-406-482	DIODE;1N4148 SAMSUNG
D904	62169-406-482	DIODE;1N4148 SAMSUNG
D905	62169-406-482	DIODE;1N4148 SAMSUNG
IC901	A4008-0026	IC;KS5513 SIP
L901	62427-812-150	COIL-PEAKING;EL0606RA 15uH-J
L902	62427-812-150	COIL-PEAKING;EL0606RA 15uH-J
L903	62427-812-187	COIL-PEAKING;EL0606RA 12uH-J
L904	62427-812-470	COIL-PEAKING;EL0606RA 47uH-J
L906	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
L907	62427-020-101	COIL PEAKING;AXIAL;LAL02TB 101J TAPG
Q901	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q902	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q903	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q904	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q905	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
R901	61079-919-222	M-CHIP RES G;QR RD 2A 2BY 2.2K-J
R902	61079-919-821	M-CHIP RES G;QR RD 2A 2BY 820-J
R903	61079-919-681	M-CHIP RES G;QR RD 2A 2BY 680-J
R904	61079-919-682	M-CHIP RES G;QR RD 2A 2BY 6.8K-J
R905	61079-919-123	M-CHIP RES G;QR RD 2A 2BY 12K-J
R906	61079-919-153	M-CHIP RES G;QR RD 2A 2BY 15K-J
R907	61079-919-272	M-CHIP RES G;QR RD 2A 2BY 2.7K-J
R909	61079-919-681	M-CHIP RES G;QR RD 2A 2BY 680-J
R910	61079-919-273	M-CHIP RES G;QR RD 2A 2BY 27K-J
R911	61079-919-622	M-CHIP RES G;QR RD 2A 2BY 6.2K-J
R912	61079-919-105	M-CHIP RES G;QR RD 2A 2BY 1M-J
R913	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R914	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R915	61079-919-564	M-CHIP RES G;QR RD 2A 2BY 560K-J
R916	61079-919-101	M-CHIP RES G;QR RD 2A 2BY 100-J
R917	61079-919-273	M-CHIP RES G;QR RD 2A 2BY 27K-J
R918	61079-919-103	M-CHIP RES G;QR RD 2A 2BY 10K-J
R919	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R921	61048-177-203	R-METAL FILM;RM 1/8TS 20K-J
R922	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J
R923	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R924	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R925	61048-177-513	R-METAL FILM;RM 1/8TS 51K-J
R926	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J

LOC. NO	PART NUMBER	DESCRIPTION, SPECIFICATION
R933	61079-919-222	M-CHIP RES G;QR RD 2A 2BY 2.2K-J
R936	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R937	61079-919-473	M-CHIP RES G;QR RD 2A 2BY 47K-J
R940	61079-919-000	M-CHIP RES G;QR RD 2A 2BY 0A-J(JUMPER)
R951	61048-177-114	R-METAL FILM;RM 1/8TS 110K-J
R952	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J
XT901	64539-012-543	CRYSTAL;17.734475M(20ppm)

LOC. NO	PART NUMBER	DESCRIPTION, SPECIFICATION
603	69247-302-201	ASSY SECAM COLOR;X-3 PAL 4H'D
C3601	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3602	61607-421-130	C-ELECTROLYTIC;LC-0511-47-18-M TAPG
C3603	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3604	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3605	61607-421-130	C-ELECTROLYTIC;LC-0511-47-18-M TAPG
C3606	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3607	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3608	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3609	61407-101-380	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3610	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 120-J
C3611	61407-105-300	C-CERAMIC.TEMP;CC45 CH TAPG 50V 68-J
C3612	A1102-0148	C-FILM;CF 922 P 100V T 104-J /C-M 365 26104/3E
C3613	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3614	61507-121-390	C-POLYESTER;CQ921M TAPG 100V 222-K
C3615	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 100-J
C3616	61507-121-390	C-POLYESTER;CQ921M TAPG 100V 222-K
C3617	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3618	61637-203-470	C-ELEC;CEAP 10V 47M SA(5X11)
C3619	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3620	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3621	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3622	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 100-J
C3623	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
CN3601	A6010-0376	CONNECTOR-WAFER;5097-07J WHT
CN3602	A6010-0375	CONNECTOR-WAFER;5097-06J WHT
D3601	62169-406-482	DIODE;1N4148 SAMSUNG
D3602	62169-406-482	DIODE;1N4148 SAMSUNG
FL3601	62809-006-030	COIL TUNNING;1.072 MHZ
FL3602	62809-006-020	COIL TUNNING;4.28 MHZ
FL3603	62809-006-030	COIL TUNNING;1.072 MHZ
FL3604	64529-632-111	FILTER-LC DIP TYPE;4.3S
FL3605	64529-632-112	FILTER-LC DIP TYPE;4.3S-T
FL3606	64529-632-113	FILTER-LC DIP TYPE;1.07M BPF
IC3601	62119-103-689	IC;BA7107S
L3601	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L3602	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L3603	62427-812-221	COIL-PEAKING;EL0606RA 220uH-J
L3604	62427-812-470	COIL-PEAKING;EL0606RA 47uH-J
Q3601	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q3602	62137-701-023	TRANSISTOR;KSR 2004 TAPG
Q3603	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q3604	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q3605	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
R3601	61048-177-272	R-METAL FILM;RM 1/8TS 2.7K-J
R3602	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J
R3603	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J
R3604	61048-177-380	R-METAL FILM;RM 1/8TS 38-J
R3605	61048-177-331	R-METAL FILM;RM 1/8TS 330-J
R3606	61048-177-561	R-METAL FILM;RM 1/8TS 560-J
R3607	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J
R3608	61048-177-123	R-METAL FILM;RM 1/8TS 12K-J
R3609	61048-177-181	R-METAL FILM;RM 1/8TS 180-J
R3610	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3611	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3612	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R3613	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3614	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J
R3615	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J
R3616	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3617	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3618	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J

LOCAL NO	PART NUMBER	DESCRIPTION, SPECIFICATION
R3619	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3620	61048-177-361	R-METAL FILM;RM 1/8TS 360-J
R3621	61048-177-681	R-METAL FILM;RM 1/8TS 680-J
R3622	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J
R3623	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3624	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J
R3625	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R3626	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J
R3627	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R3628	61048-177-105	R-METAL FILM;RM 1/8TS 1M-J
R3630	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3670	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
VR3601	61247-101-223	VR-SEMI;EVN-DJA A03 BE4 TAPG 22KB

604	69249-302-201	ASSY SOUND DUAL;X-3 PAL 4H'D
C4201	61454-239-271	M-CHIP CAP;RL UX 050 B 270-K
C4202	61507-121-570	C-POLYESTER;CQ921M TAPG 100V,683-K
C4203	61454-239-154	M-CHIP CAP;RL UX 050 B 150-K
C4204	61454-239-154	M-CHIP CAP;RL UX 050 B 150-K
C4205	61454-239-154	M-CHIP CAP;RL UX 050 B 150-K
C4206	61454-239-331	M-CHIP CAP;RL UX 050 B 330-J
C4207	61454-239-270	M-CHIP CAP;RL UX 050 SL 27-J
C4208	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C4209	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C4210	61454-239-220	M-CHIP CAP;RL UX 050 SL 22-J
C4211	61454-239-270	M-CHIP CAP;RL UX 050 SL 27-J
CN4201	A6010-0374	CONNECTOR-WAFER;5097-05J WHT
FL4201	64527-103-001	FILTER CERAMIC;SFE 5.5MB TAPG
FL4202	64529-425-030	FILTER-CERAMIC;SFE 6.5MB
L4201	62427-812-220	COIL-PEAKING;EL0606RA 22uH-J
L4202	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
Q4201	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q4202	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q4203	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q4204	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
R4201	61079-919-333	M-CHIP RES G;QR RD 2A 2BY 33K-J
R4202	61079-919-123	M-CHIP RES G;QR RD 2A 2BY 12K-J
R4203	61079-919-222	M-CHIP RES G;QR RD 2A 2BY 2.2K-J
R4204	61079-919-561	M-CHIP RES G;QR RD 2A 2BY 560-J
R4205	61079-919-122	M-CHIP RES G;QR RD 2A 2BY 1.2K-J
R4206	61079-919-682	M-CHIP RES G;QR RD 2A 2BY 6.8K-J
R4207	61079-919-681	M-CHIP RES G;QR RD 2A 2BY 680-J
R4208	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R4209	61079-919-391	M-CHIP RES G;QR RD 2A 2BY 390-J
R4210	61079-919-162	M-CHIP RES G;QR RD 2A 2BY 1.6K-J
R4211	61079-919-101	M-CHIP RES G;QR RD 2A 2BY 100-J
R4212	61079-919-203	M-CHIP RES G;QR RD 2A 2BY 20K-J
R4213	61079-919-203	M-CHIP RES G;QR RD 2A 2BY 20K-J
R4214	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R4215	61079-919-471	M-CHIP RES G;QR RD 2A 2BY 470-J
R4216	61079-919-101	M-CHIP RES G;QR RD 2A 2BY 100-J
R4217	61079-919-562	M-CHIP RES G;QR RD 2A 2BY 5.6K-J
X4201	64539-102-345	CERAMIC RESONATOR;CSB 1000J MURATA

605	69322-302-201	ASSY IF PACK;X-3 PAL E/EUROPE
C4103	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C4106	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C4107	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C4108	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C4109	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
C4110	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C4111	A1102-0148	C-FILM;CF 922 P 100V T 104-J /C-M 365 26104/3E
C4112	61617-408-478	C-ELEC;CEAP 50V 0.47M RSS(4X7)
C4113	61454-239-150	M-CHIP CAP;RL UX 050 SL 15-J
C4114	61454-239-180	M-CHIP CAP;RL UX 050 SL 18-J
C4115	61454-239-220	M-CHIP CAP;RL UX 050 SL 22-J
C4116	61454-239-390	M-CHIP CAP;RL UX 050 SL 50V 39-J

LOCAL NO	PART NUMBER	DESCRIPTION, SPECIFICATION
C4117	61507-121-470	C-POLYESTER;CQ921M TAPG 100V 103-K
C4118	61454-239-120	M-CHIP CAP;RL UX 050 SL 12-J
C4119	61454-240-227	M-CHIP CAP;RL UX 050 B 0.022-Z
C4120	61617-408-229	C-ELEC;CEAP 50V 2.2M RSS(4X7)
C4121	61507-121-481	C-POLYESTER;CQ921M TAPG 50V 153-J
CN4101	60549-0037-00	PIN-CONNECTOR;M1 W8.5 GIL-GC-10(2.5) ZD2
FL4103	B1245-0005	FILTER-SAW;SAF 38.9MZA80Z
FL4104	62719-049-012	TRANS-RESONANT(TI);40MHZ V-DET
FL4105	62719-049-013	TRANS-AFT(T2);40MHZ AFT-BAL
FL4106	64527-101-001	FILTER CERAMIC TRAP;TPS 5.5MB TAPG
FL4107	64527-102-001	FILTER-CERAMIC TRAP;TPS 6.5MB TAPG
FL4108	64527-103-001	FILTER CERAMIC;SFE 5.5MB TAPG
FL4109	B1243-0046	FILTER-CERAMIC;DS 5.5M CDA5.5ME21 TAPG
IC4101	62119-103-721	IC;LA7545
L4101	62427-812-229	COIL-PEAKING;EL0606RA 2.2uH-K
L4102	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
L4103	62427-812-100	COIL-PEAKING;EL0606RA 10uH-J
L4104	62427-812-270	COIL-PEAKING;EL0606RA 27uH-J
L4105	62427-812-220	COIL-PEAKING;EL0606RA 22uH-J
L4106	62427-812-180	COIL-PEAKING;EL0606RA 18uH-J
Q4101	62137-702-010	TRANSISTOR;KTC 388ATM
Q4102	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
R4102	61079-919-220	M-CHIP RES G;QR RD 2A 2BY 22-J
R4103	61079-919-101	M-CHIP RES G;QR RD 2A 2BY 100-J
R4104	61079-919-122	M-CHIP RES G;QR RD 2A 2BY 1.2K-J
R4105	61079-919-562	M-CHIP RES G;QR RD 2A 2BY 5.6K-J
R4106	61079-919-829	M-CHIP RES G;QR RD 2A 2BY 82-J
R4107	61079-919-681	M-CHIP RES G;QR RD 2A 2BY 680-J
R4108	61079-919-331	M-CHIP RES G;QR RD 2A 2BY 330-J
R4109	61079-919-472	M-CHIP RES G;QR RD 2A 2BY 4.7K-J
R4110	61079-919-152	M-CHIP RES G;QR RD 2A 2BY 1.5K-J
R4111	61079-919-331	M-CHIP RES G;QR RD 2A 2BY 330-J
R4112	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J
R4113	61079-919-272	M-CHIP RES G;QR RD 2A 2BY 2.7K-J
R4114	61079-919-151	M-CHIP RES G;QR RD 2A 2BY 150-J
R4115	61079-919-151	M-CHIP RES G;QR RD 2A 2BY 150-J
R4116	61079-919-561	M-CHIP RES G;QR RD 2A 2BY 560-J
R4117	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J
R4118	61079-919-224	M-CHIP RES G;QR RD 2A 2BY 220K-J
R4119	61079-919-472	M-CHIP RES G;QR RD 2A 2BY 4.7K-J
R4120	61079-919-333	M-CHIP RES G;QR RD 2A 2BY 33K-J
R4121	61079-919-562	M-CHIP RES G;QR RD 2A 2BY 5.6K-J

607	69277-302-201	ASSY BUFFER;X-3 PAL 2H'D ONLY
C3801	61637-204-220	C-ELEC;CEAP 16V 22M SA
C3802	61607-421-130	C-ELECTROLYTIC;LC-0511-47-16-M TAPG
C3803	61454-239-103	M-CHIP CAP;RL EX 050 Y 103N
CN3801	63349-120-010	PIN-CONNECTOR(G7);MAIN TO SUB 7PIN
Q3801	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
R3801	61079-919-473	M-CHIP RES G;QR RD 2A 2BY 47K-J
R3802	61079-919-563	M-CHIP RES G;QR RD 2A 2BY 56K-J
R3803	61079-919-102	M-CHIP RES G;QR RD 2A 2BY 1K-J

650	69212-302-202	ASSY PRE/AMP;X-3 PAL 2H'D
C3101	61407-115-180	C-CERAMIC TEMP;CC45 CH TAPG 50V 18-J
C3102	61407-105-680	C-CERAMIC TEMP;CC45 CH TAPG 50V 200-J
C3103	61407-117-104	C-CERAMIC AXIAL;CAX Y TAPG 16V 0.01-N
C3104	61407-117-104	C-CERAMIC AXIAL;CAX Y TAPG 16V 0.01-N
C3106	61407-117-101	C-CERAMIC AXIAL;UP050F 104Z
C3107	61407-117-104	C-CERAMIC AXIAL;CAX Y TAPG 16V 0.01-N
C3108	61407-117-104	C-CERAMIC AXIAL;CAX Y TAPG 16V 0.01-N
C3109	61407-117-104	C-CERAMIC AXIAL;CAX Y TAPG 16V 0.01-N
C3110	61407-105-330	C-CERAMIC TEMP;CC45 CH TAPG 50V 33-J
C3111	61407-101-420	C-CERAMIC TEMP;CC45 SL TAPG 50V 180-J
C3112	61407-101-482	C-CERAMIC TEMP;CC45 SL TAPG 50V 75-J
C3113	61407-105-350	C-CERAMIC TEMP;CC45 CH TAPG 50V 30-J
C3115	61407-105-860	C-CERAMIC TEMP;CC45 CH TAPG 50V 10-D

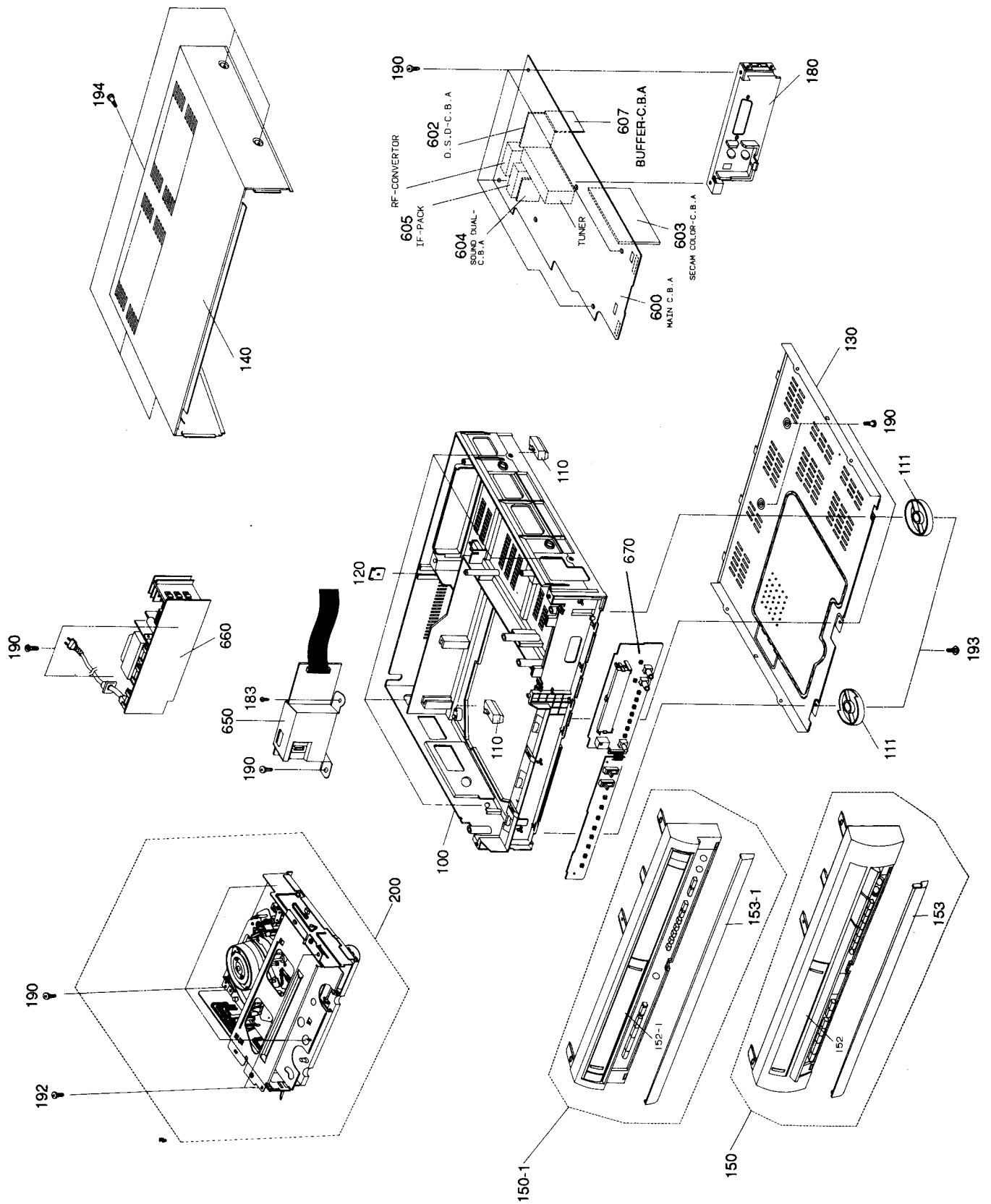
LOCA NO	PART NUMBER	DESCRIPTION SPECIFICATION
C3118	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3117	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3118	61407-117-228	C-CERAMIC.AXIAL;CAX SL TAPG 50V 223-Z
C3119	61407-101-480	C-CERAMIC.TEMP;CC45 SL TAPG 50V 330-J
C3120	61407-101-250	C-CERAMIC.TEMP;CC45 SL TAPG 50V 36-J
C3122	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3123	61607-121-480	C-ELECTROLYTIC;CE04W TAPG 16V 100M(RSS)
C3125	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C3128	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z
C3130	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z
C3135	61407-101-440	C-CERAMIC.TEMP;CC45 SL TAPG 50V 220-J
C3136	61407-101-730	C-CERAMIC.TEMP;CC45 SL TAPG 50V 150-K
C3137	61607-421-130	C-ELECTROLYTIC;LC-0511-47-16-M TAPG
C3140	61407-117-150	C-CERAMIC.AXIAL;CAX SL TAPG 50V 15-J
CN3101	63348-231-040	CONNECTOR-WAFER;52045-0410
CN3102	63349-604-210	CONNECTOR WAFER;53014-1110
D3101	62169-406-482	DIODE;1N4148 SAMSUNG
IC3101	62119-103-727	IC;LA7376(PREAMP)
L3101	62427-020-330	COIL PEAKING.AXIAL;LAL02TB 330J TAPG
L3102	62427-020-820	COIL PEAKING.AXIAL;LAL02TB 820J TAPG
L3103	62427-020-220	COIL PEAKING.AXIAL;LAL02TB 220J TAPG
L3104	62427-020-221	COIL PEAKING.AXIAL;LAL02TB 221J TAPG
L3105	62427-020-181	COIL PEAKING.AXIAL;LAL02TB 181J TAPG
L3106	62427-020-270	COIL PEAKING.AXIAL;LAL02TB 270J TAPG
L3107	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L3109	62427-020-180	COIL*PEAKING.AXIAL;LAL02TB 180J TAPG
L3111	62427-020-560	COIL PEAKING.AXIAL;LAL02TB 560J TAPG
L3113	62427-812-471	COIL-PEAKING;EL0606RA 470uH-J
L3116	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L3118	62427-812-331	COIL-PEAKING;EL0606RA 330uH-J
Q3101	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q3102	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q3103	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q3104	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
R3101	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3102	61048-177-221	R-METAL FILM;RM 1/8TS 220-J
R3103	61048-177-511	R-METAL FILM;RM 1/8TS 510-J
R3104	61048-177-391	R-METAL FILM;RM 1/8TS 390-J
R3105	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J
R3106	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J
R3107	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J
R3108	61048-177-202	R-METAL FILM;RM 1/8TS 2K-J
R3109	61048-177-392	R-METAL FILM;RM 1/8TS 3.9K-J
R3110	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J
R3111	61048-177-331	R-METAL FILM;RM 1/8TS 330-J
R3112	61048-177-561	R-METAL FILM;RM 1/8TS 560-J
R3113	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R3114	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J
R3115	61048-177-391	R-METAL FILM;RM 1/8TS 390-J
R3116	61048-177-391	R-METAL FILM;RM 1/8TS 390-J
R3117	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R3118	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R3119	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J
R3120	61048-177-561	R-METAL FILM;RM 1/8TS 560-J
R3124	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3125	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3127	61048-177-153	R-METAL FILM;RM 1/8TS 15K-J
R3128	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J
R3129	61048-177-622	R-METAL FILM;RM 1/8TS 6.2K-J
R3132	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J
R3133	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3135	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R3147	61048-177-682	R-METAL FILM;RM 1/8TS 6.8K-J

LOCA NO	PART NUMBER	DESCRIPTION SPECIFICATION
B267	69000-291-023	DECK JOINT ASSY;X-3(V2)
C6201	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C6202	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C6203	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z
CN6201	63349-083-392	FFC CONNECTOR WAFER;HLEM 22R-1
CN6202	63349-603-030	CONNECTOR-WAFER;53015-0310
CN6203	63053-916-391	LEAD CONNECTOR ASSY;9073-9 1429 #26 50mm
CN6204	63053-916-390	LEAD CONNECTOR ASSY;9073-6 1429 #26 190mm
IC6201	62119-103-712	IC;TC4021BP
Q6201	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
R6201	61048-177-391	R-METAL FILM;RM 1/8TS 390-J
R6202	61048-177-224	R-METAL FILM;RM 1/8TS 220K-J
R6203	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J
R6206	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R6207	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R6208	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J
R6209	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6210	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6211	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6212	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6213	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6214	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6215	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6216	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6217	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R6218	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6219	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R6220	61048-177-181	R-METAL FILM;RM 1/8TS 180-J

7. EXPLODED VIEWS

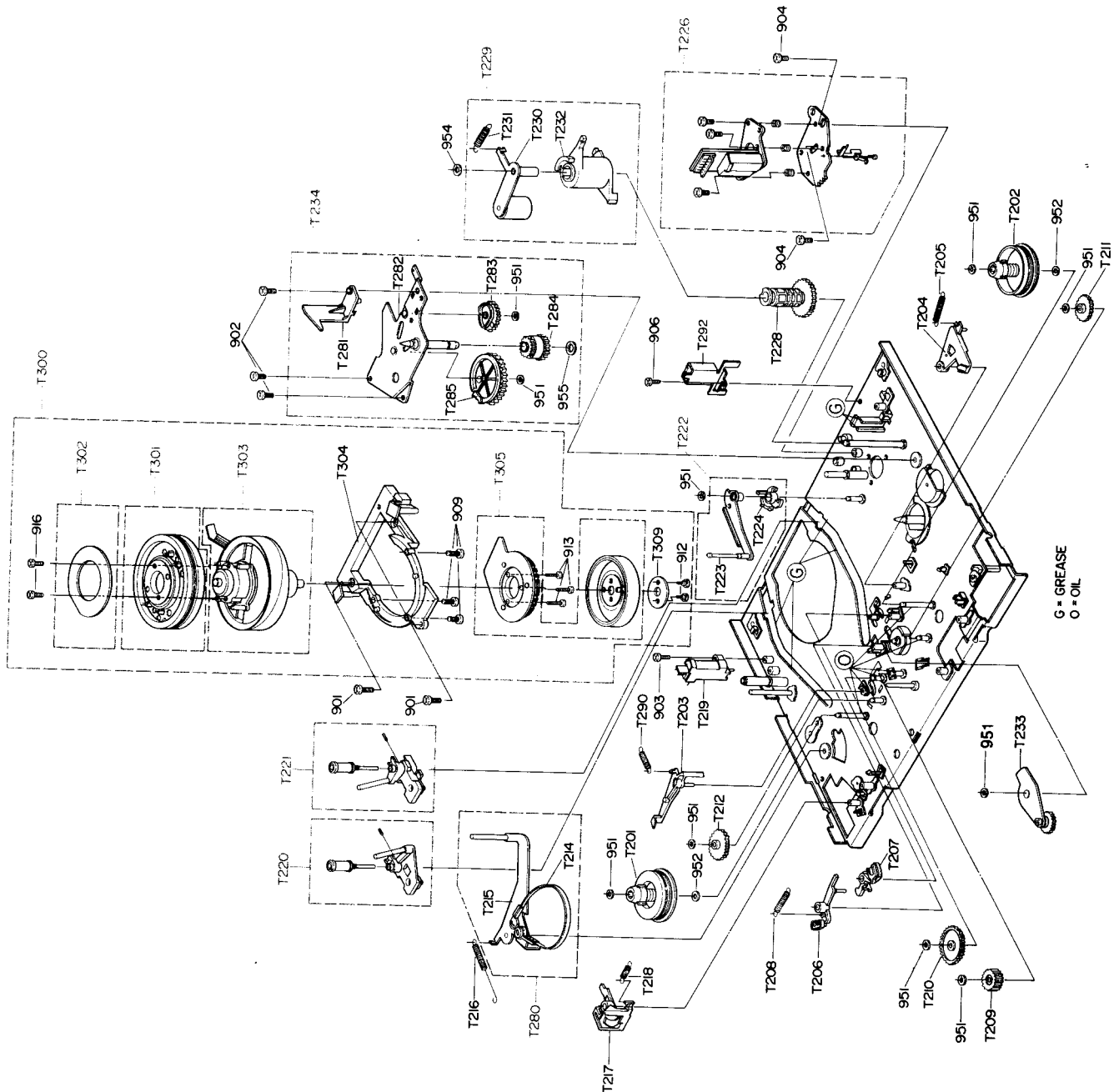
	Page
7-1. Instrument Assembly - - - - -	7-2
7-2. Transport Mechanism Assembly - - - - -	7-4
7-3. Bottom Side Mechanism Assembly - - - - -	7-6
7-4. Housing Assembly - - - - -	7-8

7-1. Instrument Assembly



LOCA NO	PART NUMBER	DESCRIPTION, SPECIFICATION
100	66020-603-410	FRAME;HIPS 94-HB G1-3WM
110	66074-601-810	LEG;TPE 7705(BLK)
111	69000-201-404	ASSY-LEG V-2;ABS 94-HB+EVA
120	66614-714-310	BRKT-GUIDE TOP S;SPG T1.0
130	66611-600-610	BOTTOM-COVER;SPG T0.5
140	66001-601-710	TOP-CABINET;FE+PVC T0.75
150	69000-203-206	ASSY PANEL FRONT;VK-3260
	69000-203-205	ASSY PANEL FRONT;VK-3230
152	67642-607-504	DOOR-HOUSING;VX-3260/VK-3230
153	67642-607-470	DOOR-FRONT;VX-3260
	67642-607-403	DOOR-FRONT;VK-3230
180	66002-0002-00	CONNECTOR-BOARD;HIPS 94-HB PAL B/G D/K
183	67108-330-061	SCREW-PH;M3X6 TAP TITE
190	67158-240-121	SCREW BH;2-4*12 FE FZY
192	60504-0040-00	SCREW-TAP TITE;BH + TB 3 L12 SWRCH18A ZPC3 YEL
193	67158-240-180	SCREW TAP PWH;2-4*16 FE FZY
194	67158-240-103	SCREW-TAP.BH;2S-4X10FE FZB
200	DX3A-R	FULL DECK ASSY;PAL V-2 DECK
600		ASSY MAIN;X-3 PAL 2H'D E/EUROPE
602	69252-302-202	ASSY OSD;X-3 PAL 4H'D(SST)
603	69247-302-201	ASSY SECAM COLOR;X-3 PAL 4H'D
604	69249-302-201	ASSY SOUND DUAL;X-3 PAL 4H'D
605	69322-302-201	ASSY IF PACK;X-3 PAL E/EUROPE
607	69277-302-201	ASSY BUFFER;X-3 PAL 2H'D ONLY
650	69212-302-202	ASSY PRE/AMP;X-3 PAL 2H'D
660	69098-225-500	REGULATOR ASSY;X3 230V CP2
670	69271-302-218	ASSY FTIMER;VK-3260/VK-3230

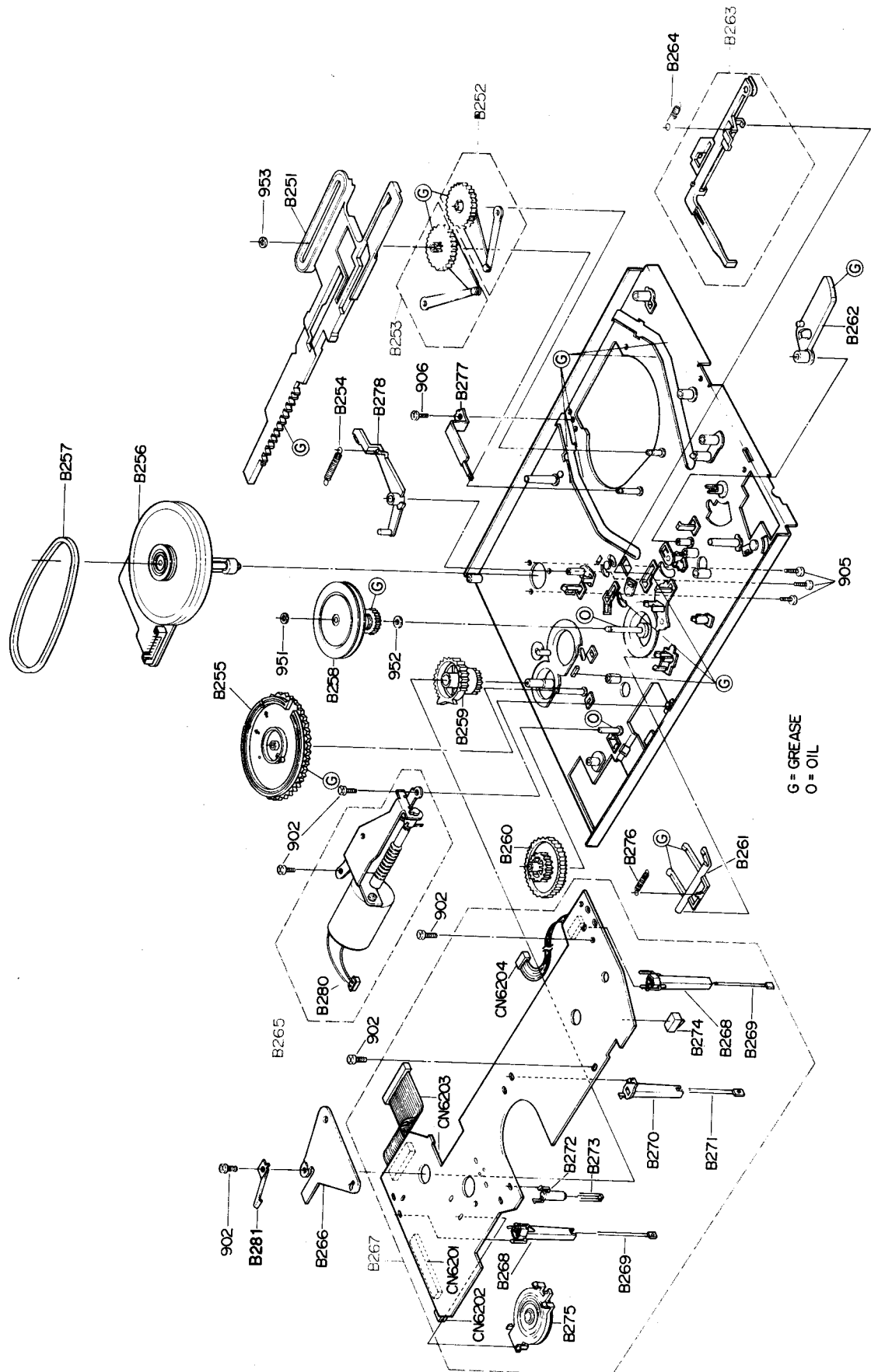
7-2. Transport Mechanism Assembly



LOC.A.NO	PART-NUMBER	DESCRIPTION,SPECIFICATION
901	67004-100-310	SCREW-PH;+M3X8 FE FZY WL
902	67108-526-243	SCREW-TAP PH;2S-3X8 FE FZY
903	60504-0032-00	SCREW-PH;+M2.6X10 TAPPING
904	60504-0041-00	SCREW TAPPING;BH 3 M2.6 L6 SWRCH18A YEL
906	67004-100-710	SCREW-PH;+M3X4 FE FZY
909	67008-126-081	SCREW-PH;+M2.6X8 FE FZY
912	67094-604-710	SCREW-DAMPER;M2.0X7.0 SWCM 10(MFZN2-C)
913	67008-123-101	SCREW-PH;+M2.3X10 FE FZY
916	67004-126-086	SCREW-BH;+M2.6X8 WSN70391398
951	67334-600-310	WASHER SLIT;PI2.5XPI5XT0.5
952	67304-103-410	WASHER-PLAIN;3.2X6X0.5 POLYSLIDER
954	60534-0024-00	WASHER SLIT;ID3 OD8 T0.5 POLYSLIDE
955	60534-0019-00	WASHER-SLIT;A ID5 OD9 T0.5 POLYSLIDE
T201	61574-0010-01	REEL DISK(L) ASSY;X3RL03032A
T202	61574-0012-01	REEL DISK(R) ASSY;X3RL 03031A
T203	66603-620-110	BRAKE SUB L;POM(M90-44) NAT
T204	62614-0004-01	BRAKE SUB(R) ASSY;X3RL02021A
T205	66674-652-610	S/P BRAKE SUB
T206	62614-0003-01	BRAKE MAIN(L) ASSY;X3RL02022A
T207	62614-0002-01	BRAKE MAIN(R) ASSY;X3RL02021A
T208	66674-652-510	S/P BRAKE MAIN;SUS304 WPB
T209	61474-0061-01	GEAR RELAY S1;PEBAX #6333
T210	61474-0062-01	GEAR RELAY S2;POM(M90-44) NAT
T211	61474-0060-01	GEAR RELAY T;PEBAX #6333
T212	61474-0063-01	GEAR RELAY S3;PEBAX #6333
T214	62024-0005-01	BAND TENSION ASSY;X3RL04051A
T215	69000-290-570	ARM-TENSION ASSY;SECC+SUS
T216	66674-652-910	SPRING TENSION;SUS304
T217	61533-0048-00	LEVER REC SW;POM M90-44 H9.6 BLK(V2)
T218	62724-0075-00	S/P RECORD SW;SUS304
T219	64079-700-454	HEAD MAGNETIC F/E;VTR-1X2ERS11-089(X-1)
T220	69000-291-035	ASSY-P.B & G.R(L);X-3
T221	69000-291-036	ASSY-P.B & G.R(R);X-3
T222	69000-291-004	FULL REVIEW ARM ASSY;X-3
T223	61544-0032-00	REVIEW ARM ASSY;SECC+SUS303C+C3604BD
T224	61473-0059-01	GEAR REVIEW;POM(M90-44) NAT
T226	69000-291-003	ASSY-ACE/HD FULL;X-3A
T228	61472-0054-01	GEAR ESCALATOR;POM(M90-44)
T229	61523-0021-01	PINCH ROLLER UNIT;X-3A
T230	61543-0040-01	ARM PINCH ASSY;SECC 1.6+SUS+C3604BD

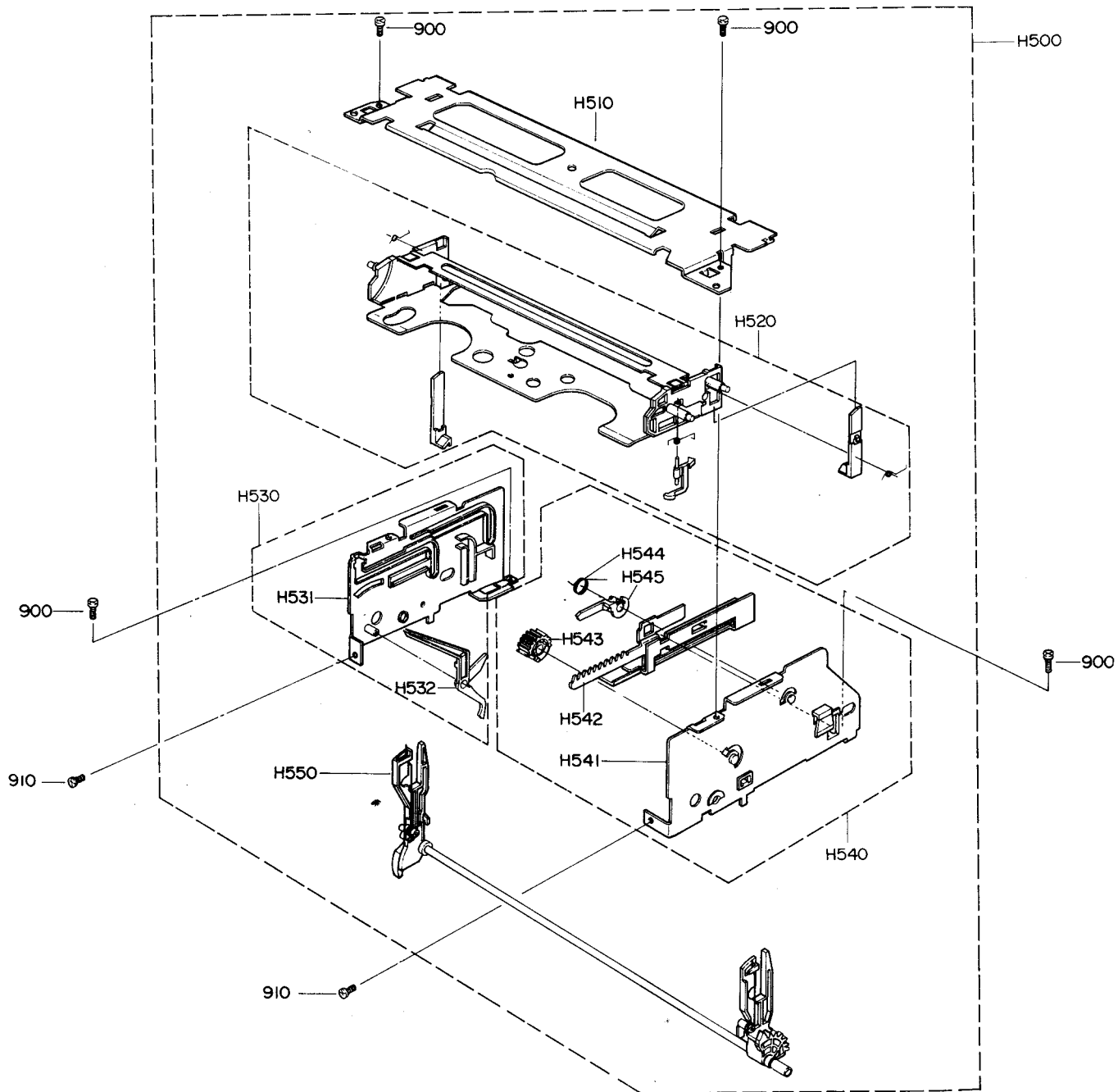
LOC.A.NO	PART-NUMBER	DESCRIPTION,SPECIFICATION
T231	62724-0062-01	S/P PINCH ROLLER;SUS304-WPB
T232	63323-0043-01	HOLDER ESCALATOR;PC 30%
T233	61604-0003-01	IDLER SUB ASSY;X3RL 06061A
T234	67179-0069-00	DRIVE PINCH ASSY;X-3
T280	69000-290-560	ASSY FULL ARM TENSION;SECC+SUS+POM+FELT
T281	63073-0015-00	SUPPORTER-LID OPENER;POM(M90-44) T2 X-3
T282	63012-0098-00	BRKT PINCH DRIVE;SECC T1.0
T283	61473-0058-01	GEAR CAM PINCH;POM(OL-10)
T284	61473-0056-01	GEAR RELAY PINCH;PBT #2002
T285	61473-0057-01	GEAR CAM DRIVE;POM(OL-10)
T290	62724-0101-00	S/P BRAKE SUB
T292	67223-600-210	HOLDER TR ASSY;A1050P+SUS 301CSP
T300	69020-123-001	CYLINDER ASSY;CV2-S2P
T301	69000-390-012	UPPER CYLINDER ASSY;CX1S2P
T302	63005-701-075	PWB-UPPER CYLINDER;94V0 47X47X1.0T
T303	69000-390-280	LOWER CYLINDER ASSY;DX1-S2
T304	66121-602-410	BASE CYLINDER;ADC12
T305	64769-160-170	MOTOR CYLINDER;DMVDMT 03A(X-1)
T309	66124-601-710	RETAINER-RUBBER ASSY;SECC+SILICONE

7-3. Bottom Side Mechanism Assembly



LOC. NO	PART NUMBER	DESCRIPTION; SPECIFICATION
902	67108-526-243	SCREW-TAP PH;2S-3X8 FE FZY
905	67094-700-760	SCREW-PWH;M2.6X6 FE FZY
906	67004-100-710	SCREW-PH;+M3X4 FE FZY
951	67334-600-310	WASHER SLIT;PI2.5XPI5XT0.5
952	67304-103-410	WASHER-PLAIN;3.2X6X0.5 POLYSLIDER
953	67334-601-830	WASHER SLIT;PI2.5X9X0.5(RED)
B251	66602-603-510	SLIDE MAIN;PBT 6300T(NAT)
B252	61473-0047-01	GEAR LOADING "L" ASSY;X-3
B253	61473-0045-01	GEAR LODAING "R" ASSY;X-3
B254	66674-652-810	S/P BRAKE CAPSTAN;SUS304 WPB
B255	61472-0055-01	GEAR MASTER;POM(M90-44)
B256	66829-0024-00	MOTOR D/D/ CAPSTAN;DMVCMC05A X-3A
B257	65274-603-910	BELT CAPSTAN;CY-65
B258	61453-0001-01	CLUTCH ASSY;X3RL10101A
B259	61473-0051-01	GEAR E/J DRIVE;PBT #2002
B260	61473-0053-01	GEAR WORM WHEEL;NYLON 66
B261	66603-619-510	LEVER SHIFT;POM(M90-44)
B262	61534-0040-01	LEVER TENSION CONTROL;POM(M90-44) NAT
B263	61643-0016-01	SLIDE I.B ASSY;X3RL02021A
B264	62724-0129-00	SPRING-RELEASE BRAKE;SUS304 WPB
B265	67171-0039-01	L/D UNIT ASSY;X-3A
B266	63013-0065-01	BRKT E/J DRIVE;SECC(T1.2)
B267	69000-291-023	DECK JOINT ASSY;X-3(V2)
B268	63323-0050-00	HOLDER TR;ABS H34.7 BLK(V2)
B269	66219-0010-00	SENSOR-PHOTO TR;PT 493F
B270	63323-0049-00	HOLDER LED;POM M90-44 BLK(V2)
B271	62309-112-043	LED IR;GL-451(SHARP)
B272	63324-0051-00	HOLDER PHOTO INTERRUPTER;POM M90-44 H11.4 WHT
B273	66419-0001-00	PHOTO INTERRUPTER;SG-105LF
B274	66209-0008-00	REC SWITCH;MPU 10100 MMBO
B275	66203-0007-02	PROGRAM SW;SMR-009-S(K-ALPS)
B276	66674-652-410	SPRING LEVER SHIFT;SUS 304 WPB
B277	63374-0002-00	HEAD BRUSH ASSY;SECC+CARBON
B278	62614-0005-01	BRAKE DD CAP ASSY;X3RL02021A
B280	63053-916-393	LEAD CONNECTOR ASSY;1429 #26 51004 3P 55MM
B281	62654-0008-00	GROUND PLATE TOP;SUS430
CN6201	63349-083-392	FFC CONNECTOR WAFER;HLEM 22R-1
CN6202	63349-603-030	CONNECTOR-WAFER;53015-0310
CN6203	63053-916-391	LEAD CONNECTOR ASSY;9073-9 1429 #26 50mm
CN6204	63053-916-390	LEAD CONNECTOR ASSY;9073-6 1429 #26 190mm

7-4. Housing Assembly

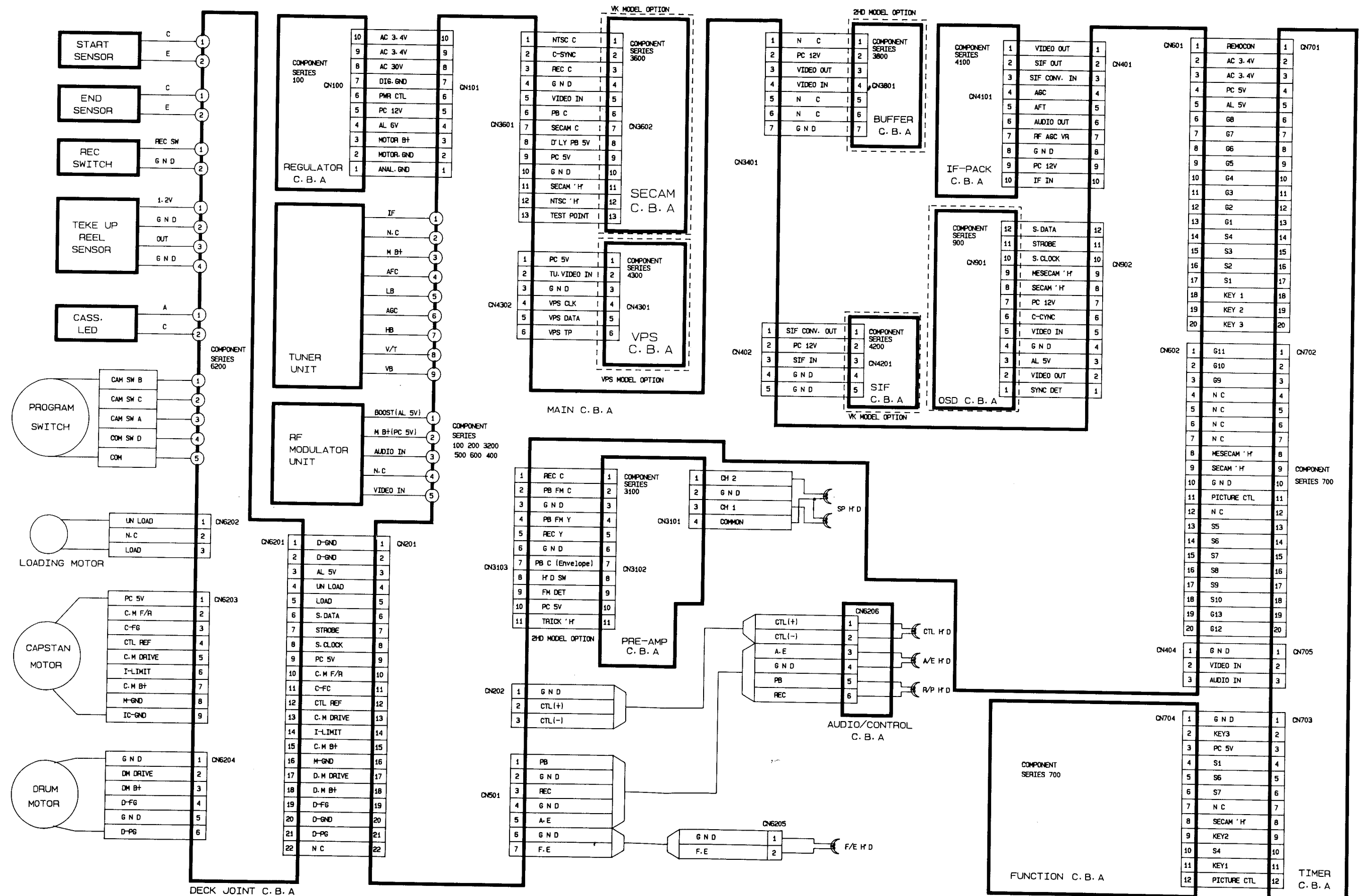


LOCA NO	PART NUMBER	DESCRIPTION; SPECIFICATION
900	67008-130-061	SCREW-PH;+M3X6 FE FZY
910	67108-330-061	SCREW-PH;M3X6 TAP TITE
H500	62052-0004-00	F/L HOUSING ASSY;X-3 FL28300A
H510	62202-0029-00	UPPER CHASSIS;SECC E20/20 T1.2
H520	63322-0044-00	CASS HOLDER ASSY;X-3 FL11120A
H530	62203-0027-00	CHASSIS SIDE "L" ASSY;X3FL02020A
H531	62203-0028-00	CHASSIS SIDE "L" OUTSERT;SECC T1.2+LUCEL/KEPITA
H532	61533-0043-00	LEVER DOOR;LUCEL-N109-LD/KEPITAL F20-03
H540	62203-0025-00	CHASSIS SIDE "R" ASSY;X3FL08080A
H541	62203-0026-00	CHASSIS SIDE "R" OUTSERT;SECC T1.2+LUCEL/KEPITA
H542	61474-0080-00	GEAR RACK ASSY;SECC T1.6+SWPB
H543	61473-0064-00	JOINT GEAR;D/C(ZDC-2)
H544	62724-0067-00	SPRING LEVER DAMPER;SUS304 WPB
H545	61533-0042-00	LEVER DAMPER;LUCEL N109-LD/KEPITAL F20-03
H550	61043-0025-00	SHAFT ARM ASSY;X3FL05050A

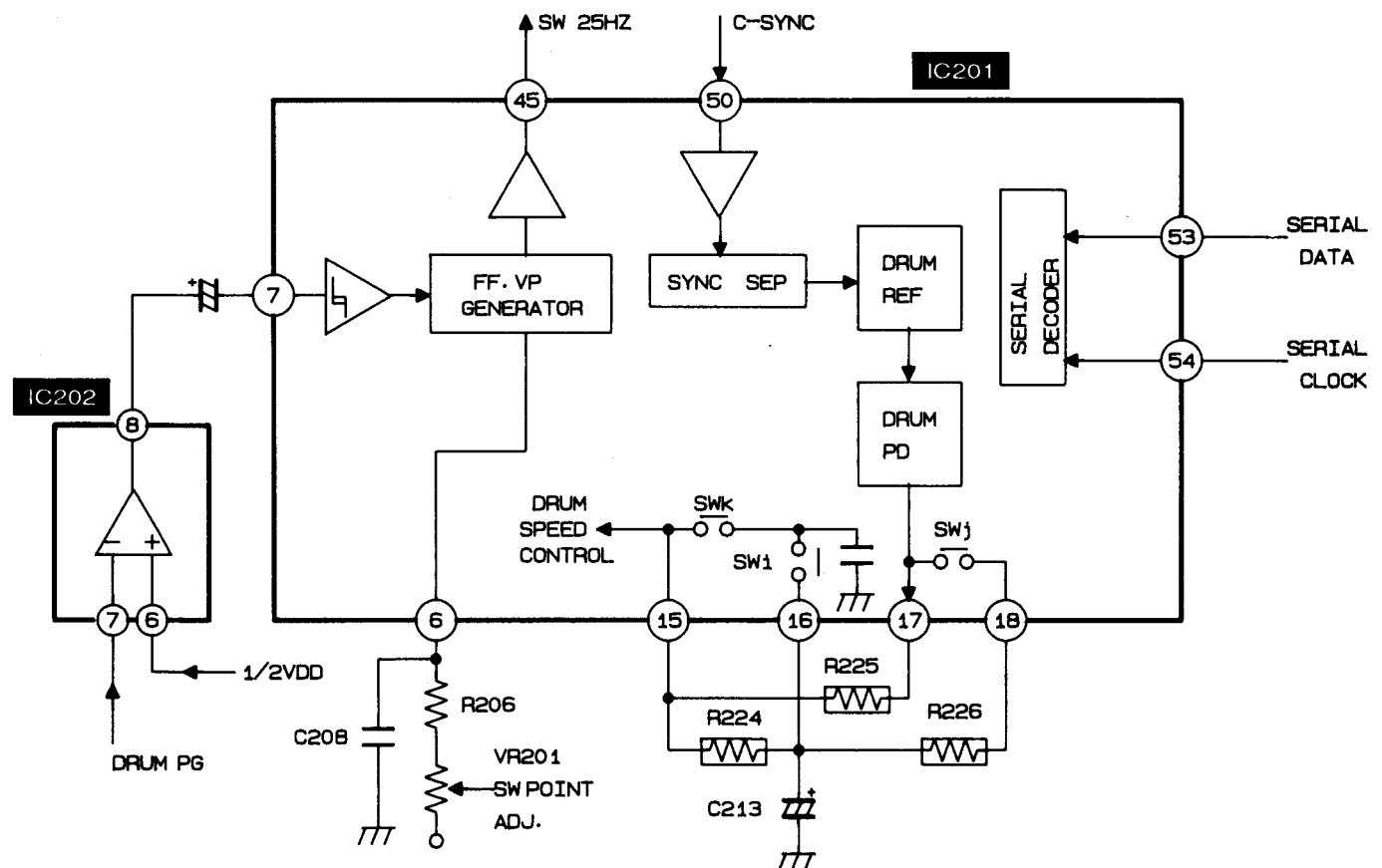
8. BLOCK DIAGRAMS

	Page
8-1. Total Wiring Diagram - - - - -	8-2
8-2. Drum Phase Control - - - - -	8-3
8-3. Drum Speed Control - - - - -	8-3
8-4. Capstan Phase Control - - - - -	8-4
8-5. Capstan Speed Control - - - - -	8-4
8-6. Audio Playback Process - - - - -	8-5
8-7. Audio Record Process - - - - -	8-5
8-8. Luminance Playback Process - - - - -	8-6
8-9. Luminance Record Process - - - - -	8-7
8-10. Chrominance Playback Process - - - - -	8-8
8-11. Chrominance Record Process - - - - -	8-9

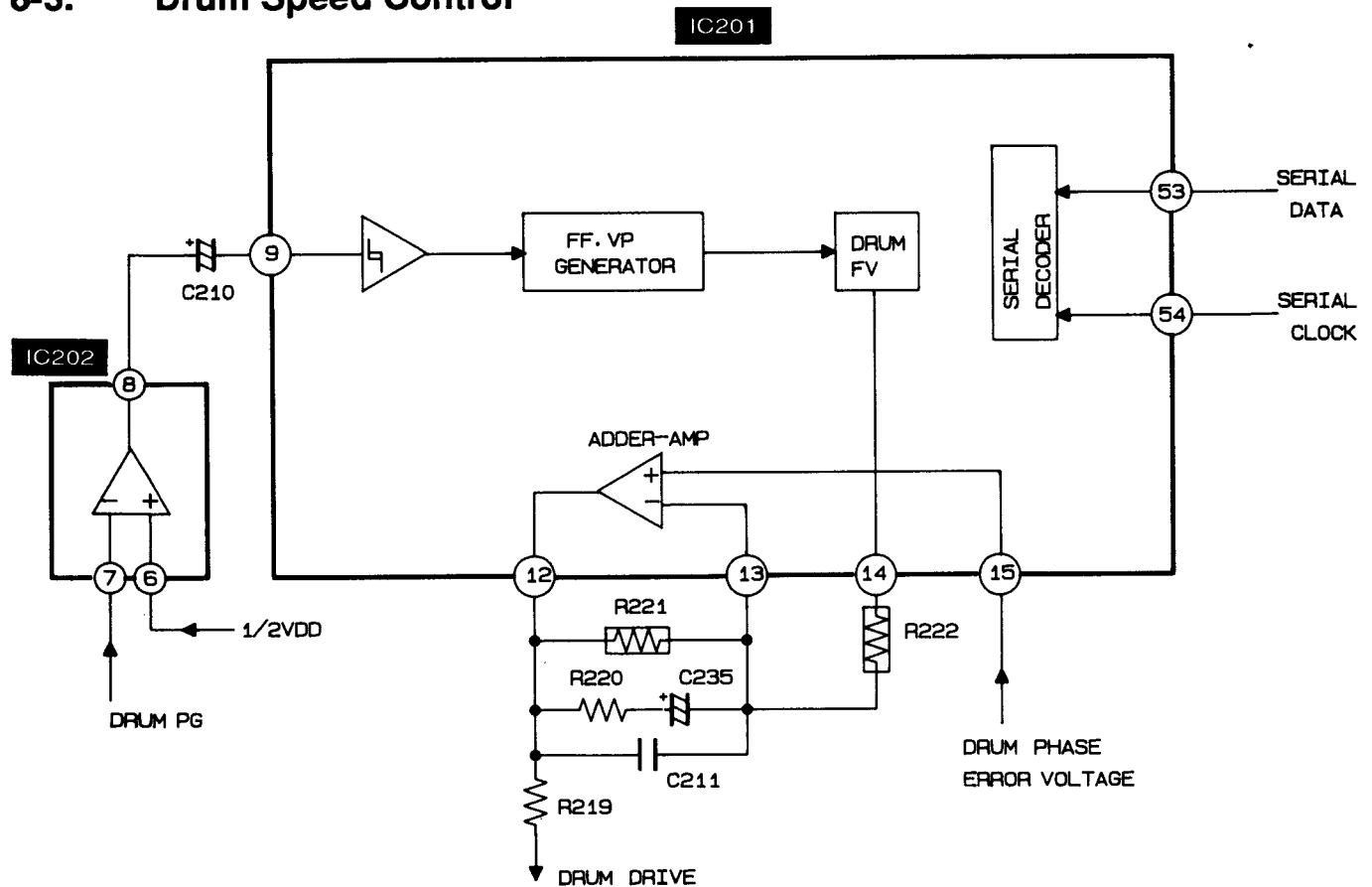
8-1. Total Wiring Diagram



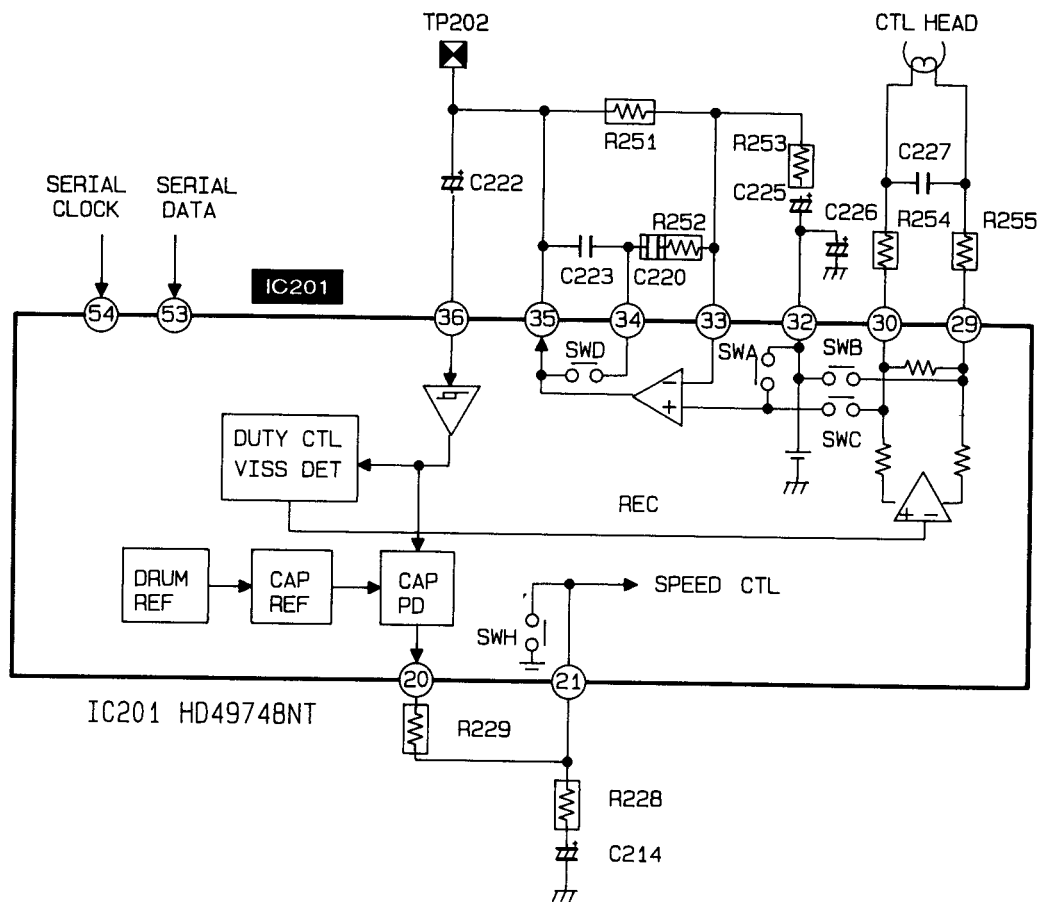
8-2. Drum Phase Control



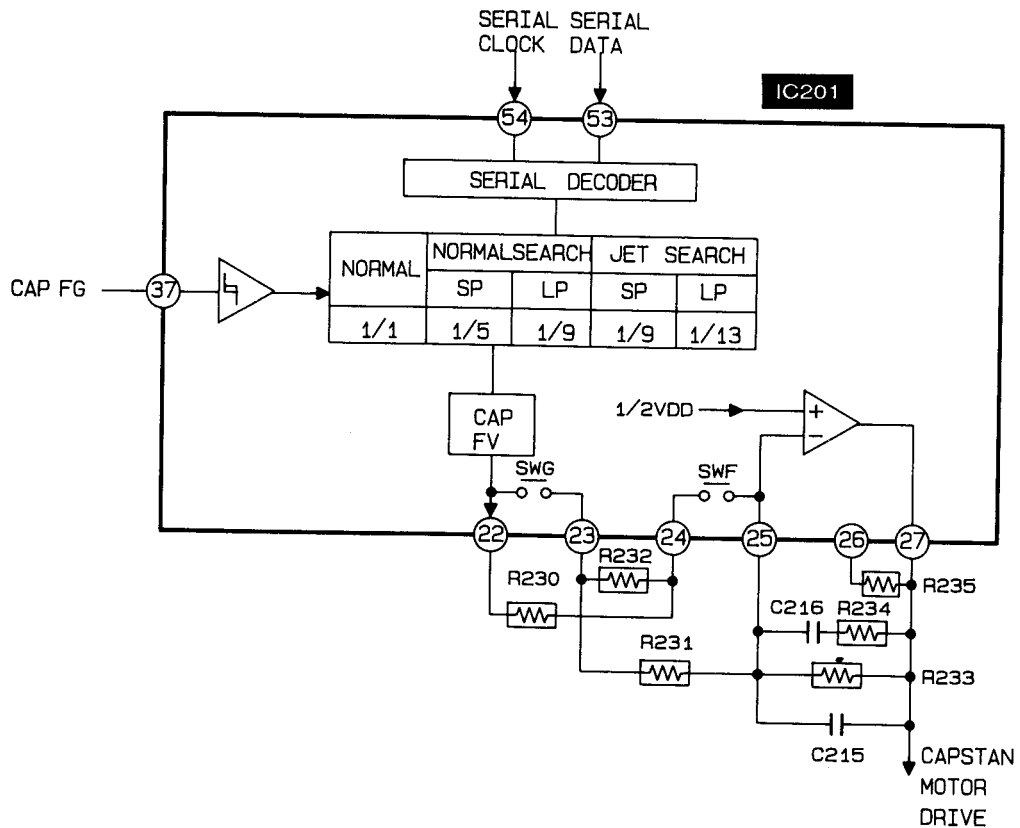
8-3. Drum Speed Control



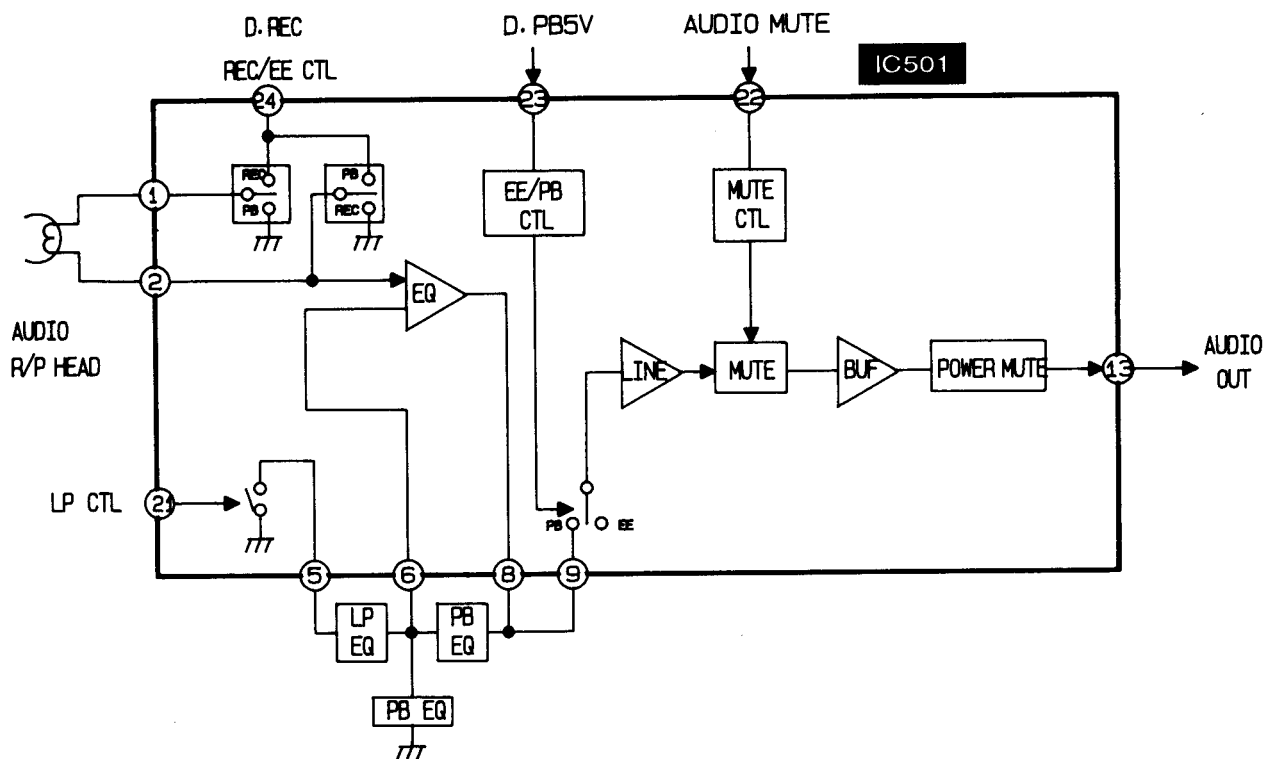
8-4. Capstan Phase Control



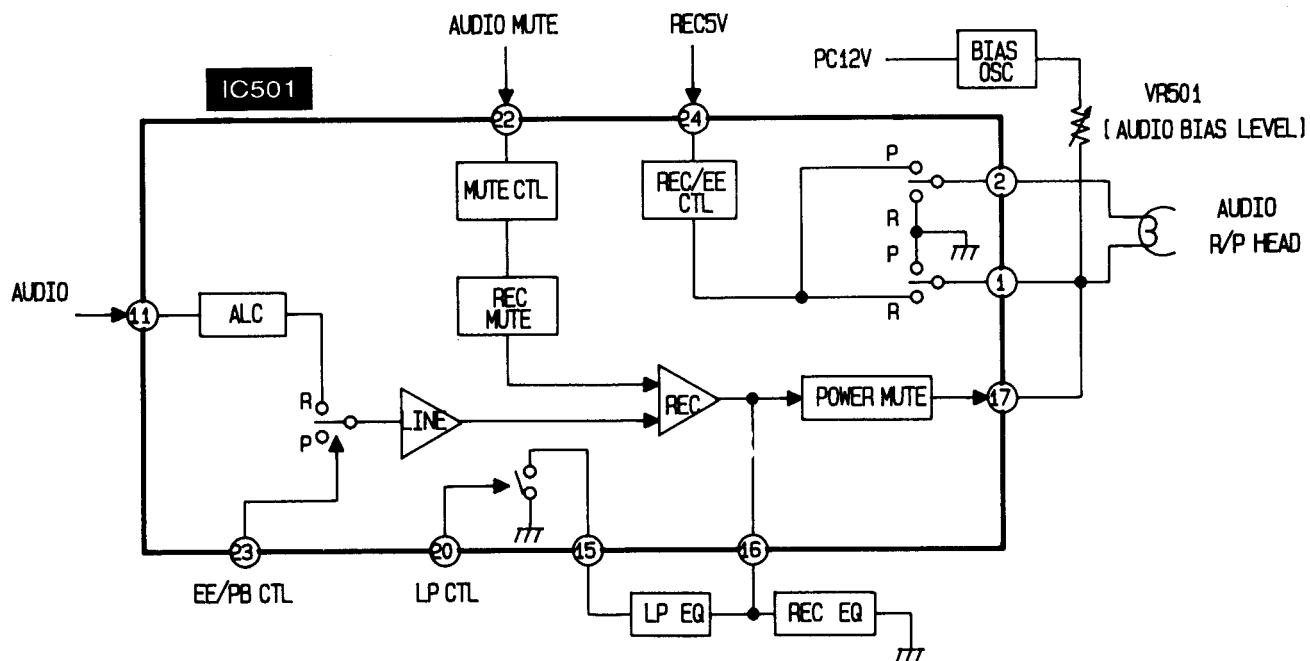
8-5. Capstan Speed Control



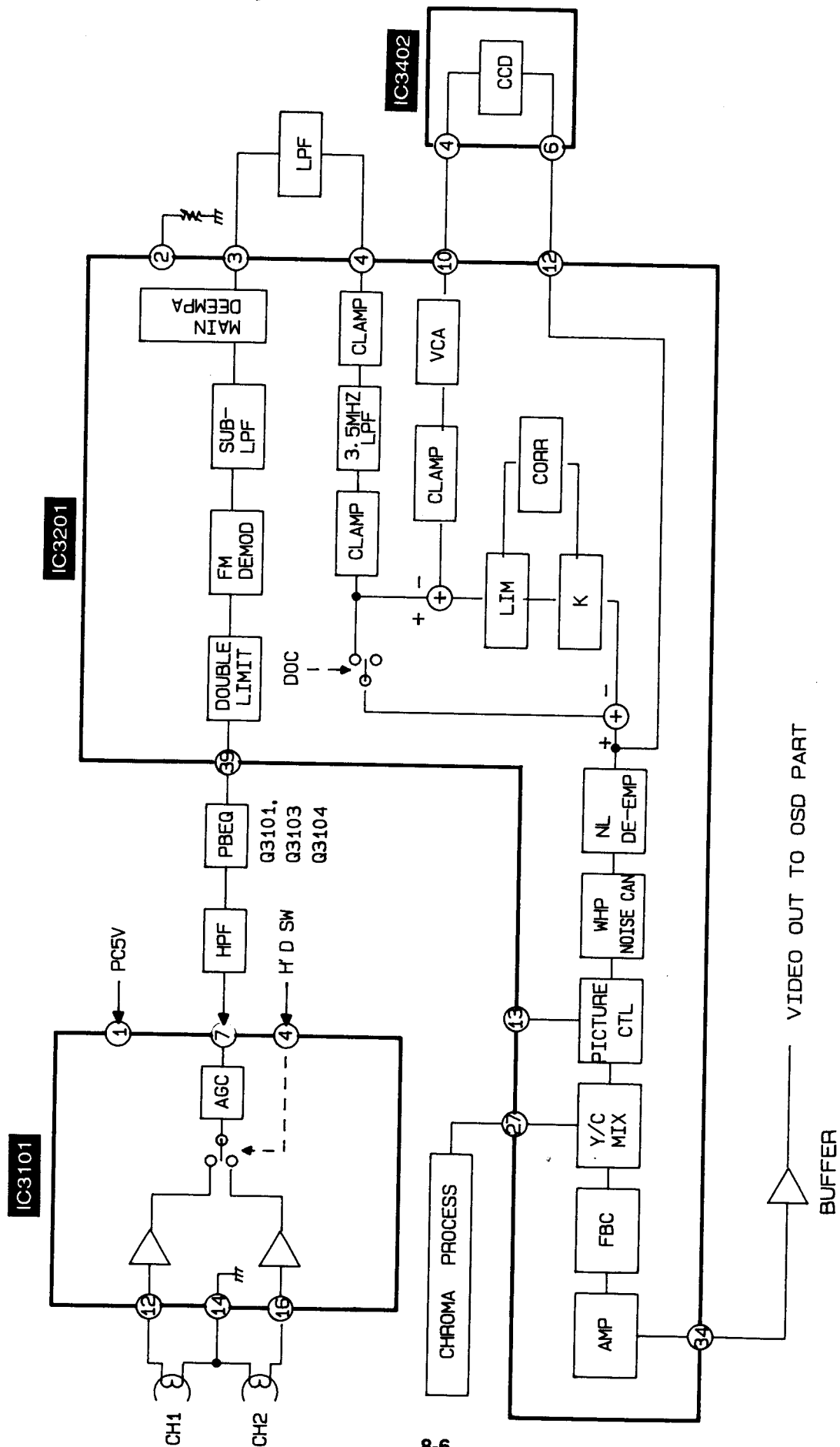
8-6. Audio Playback Process



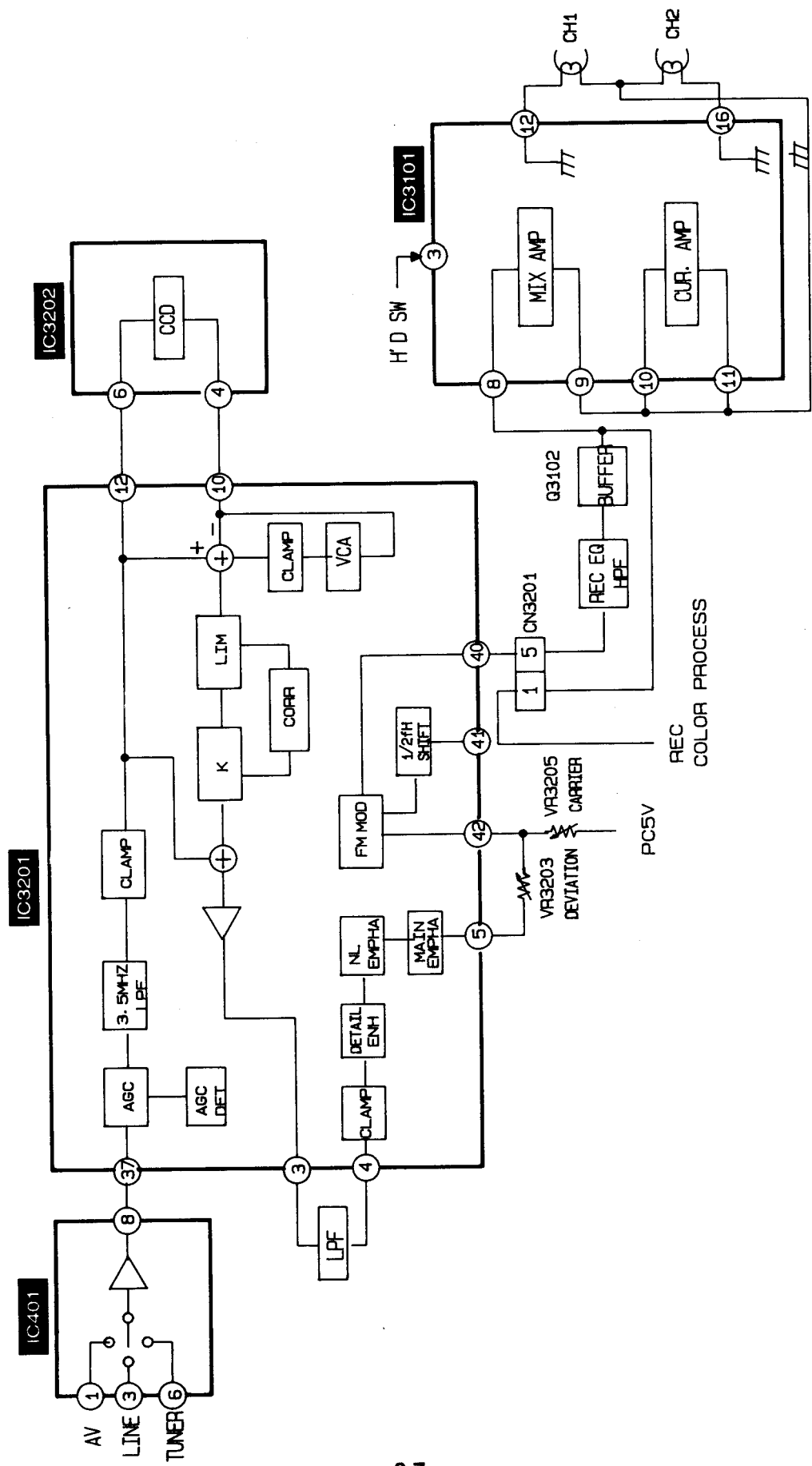
8-7. Audio Record Process



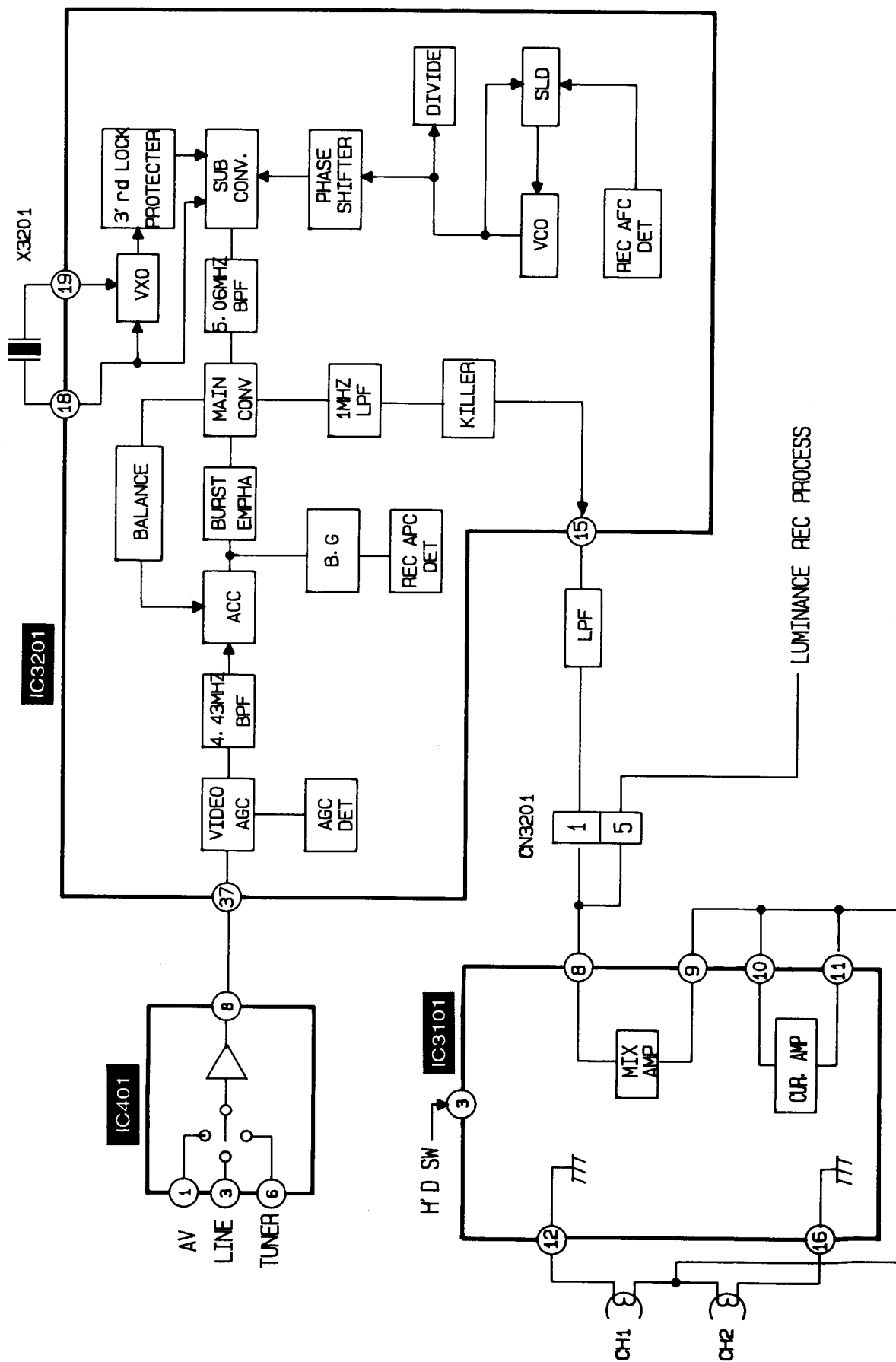
8-8. Luminance Playback Process



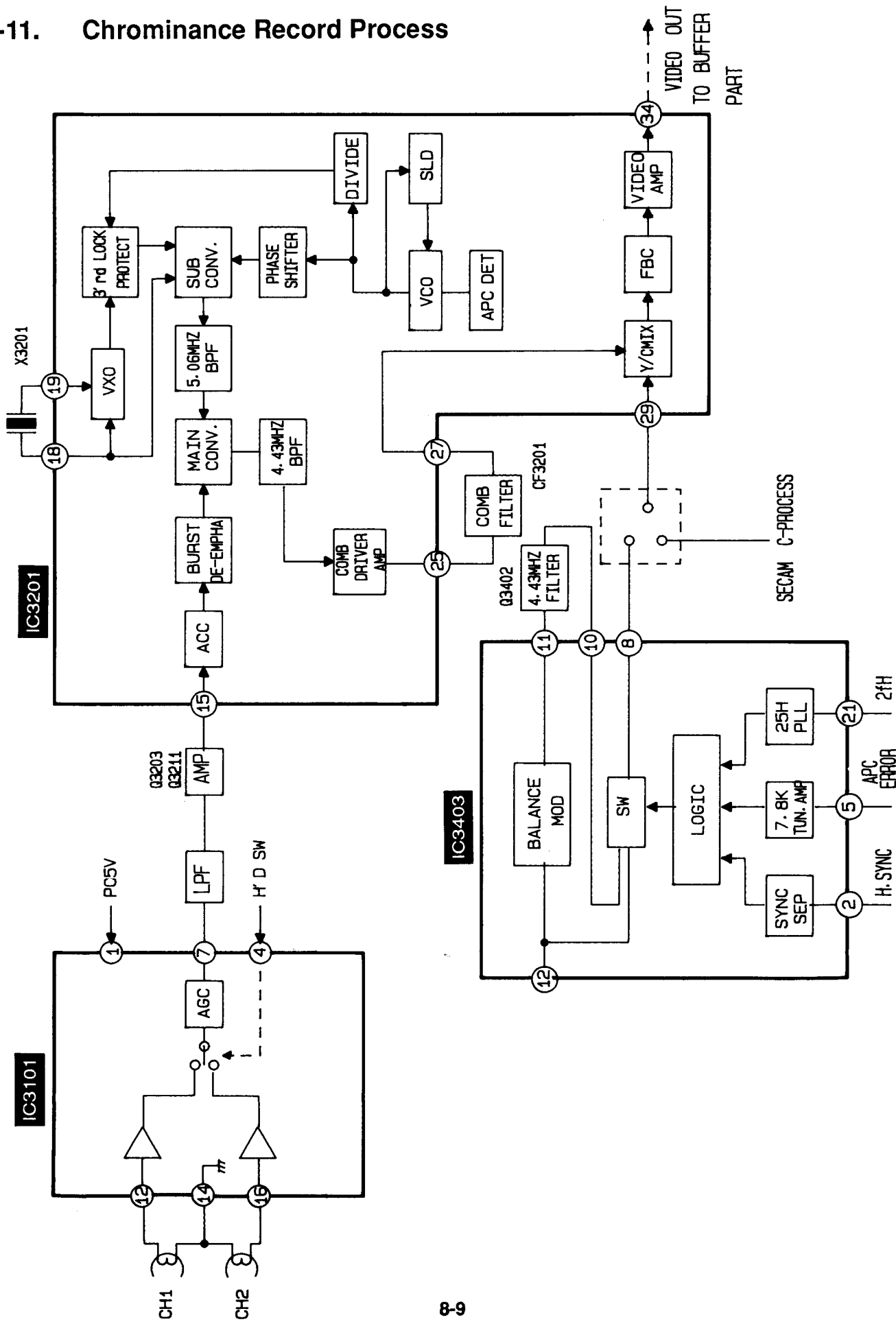
8-9. Luminance Record Process



8-10. Chrominance Playback Process



8-11. Chrominance Record Process

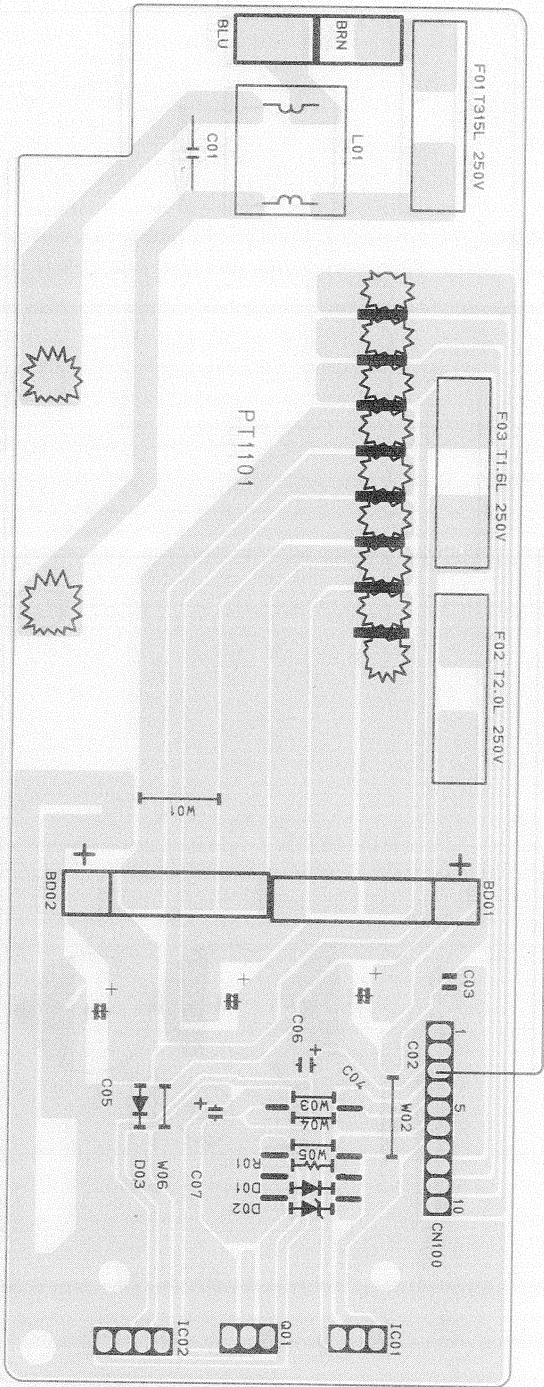


9. CIRCUIT BOARDS

		Page
9-1.	Regulator (Top Side) - - - - -	9-3
	Regulator (Bottom Side) - - - - -	9-4
9-2.	SOUND DUAL (Top Side) - - - - -	9-5
	SOUND DUAL (Bottom Side) - - - - -	9-6
9-3.	SECAM COLOR (Top Side) - - - - -	9-5
	SECAM COLOR (Bottom Side) - - - - -	9-6
9-4.	IF-PACK (Top Side) - - - - -	9-7
	IF-PACK (Bottom Side) - - - - -	9-8
9-5.	O.S.D (Top Side) - - - - -	9-7
	O.S.D (Bottom Side) - - - - -	9-8
9-6.	Buffer (Top Side) - - - - -	9-9
	Buffer (Bottom Side) - - - - -	9-10
9-7.	Pre-Amp (Top Side) - - - - -	9-9
	Pre-Amp (Bottom Side) - - - - -	9-10
9-8.	Main (Top Side) - - - - -	9-11
	Main (Bottom Side) - - - - -	9-12
9-9.	Deck Joint (Top Side) - - - - -	9-13
	Deck Joint (Bottom Side) - - - - -	9-14

	Page
9-10. Function (Top Side) (VK-3260/VK-3230) - - - - -	9-15
 Function (Bottom Side) (VK-3260/VK-3230) - - - - -	9-16
9-11. Function (Top Side) (VK-3261/VK-3231) - - - - -	9-17
 Function (Bottom Side) (VK-3261/VK-3231) - - - - -	9-18
9-12. Timer (Top Side) (VK-3260/VK-3230) - - - - -	9-19
 Timer (Bottom Side) (VK-3260/VK-3230) - - - - -	9-20
9-13. Timer (Top Side) (VK-3261/VK-3231) - - - - -	9-21
 Timer (Bottom Side) (VK-3261/VK-3231) - - - - -	9-22

9-1. Regulator (Bottom Side)



CN100

1	AC 3.4V
2	AC 3.4V
3	AC 30V
4	DIG. GND
5	PWR CTL
6	PC 12V
7	AL 6V
8	MOTOR B+
9	MOTOR. GND
10	ANAL. GND

TO MAIN
CN101



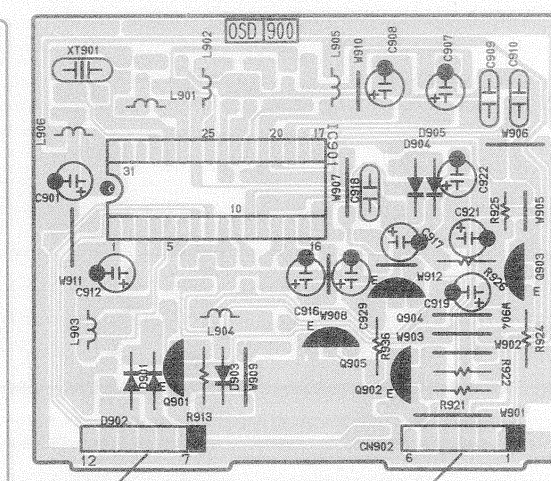
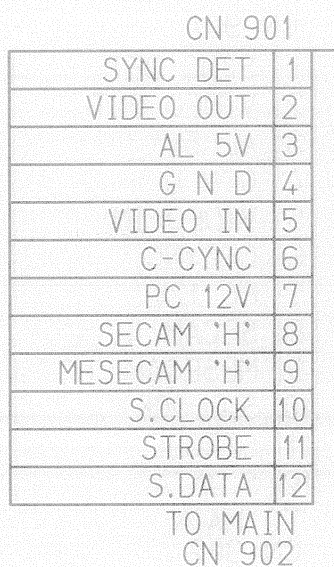
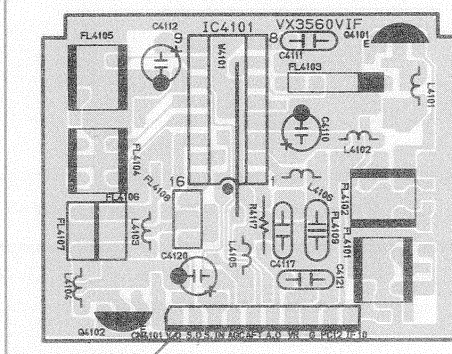
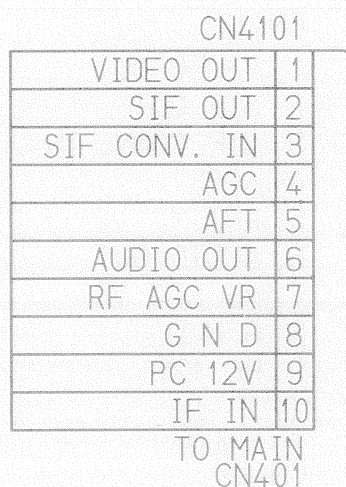
1	SIF CONV.OUT
2	PC 12V
3	SIF IN
4	G N D
5	G N D

TO MAIN
CN402

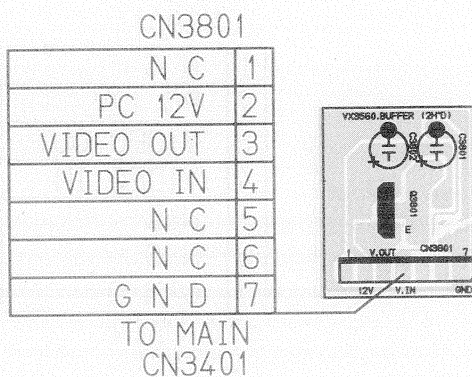


1	NC
2	C-SYNC
3	SECAM REC C OUT
4	GND
5	VIDEO IN
6	SECAM C OUT
7	SECAM PB C IN
8	DLY PB5V
9	PC5V
10	GND
11	SECAM **H**
12	NC
13	BELL TEST POINT

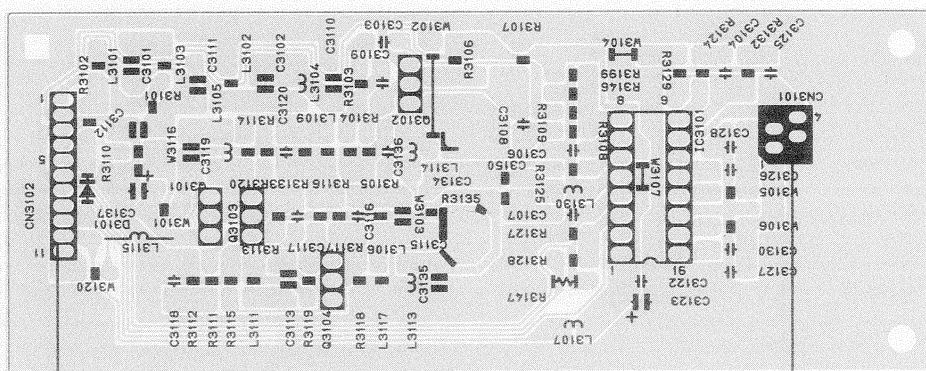
TO MAIN
CN3601



9-6. Buffer (Top Side)



9-7. Pre-Amp (Top Side)



CN3102

1	REC C
2	PB FM C
3	G N D
4	PB FM Y
5	REC Y
6	G N D
7	REC 'H'
8	H'D SW 25
9	ENVE DET
10	PC 5V
11	TRICK 'H'

TO MAIN
CN3103

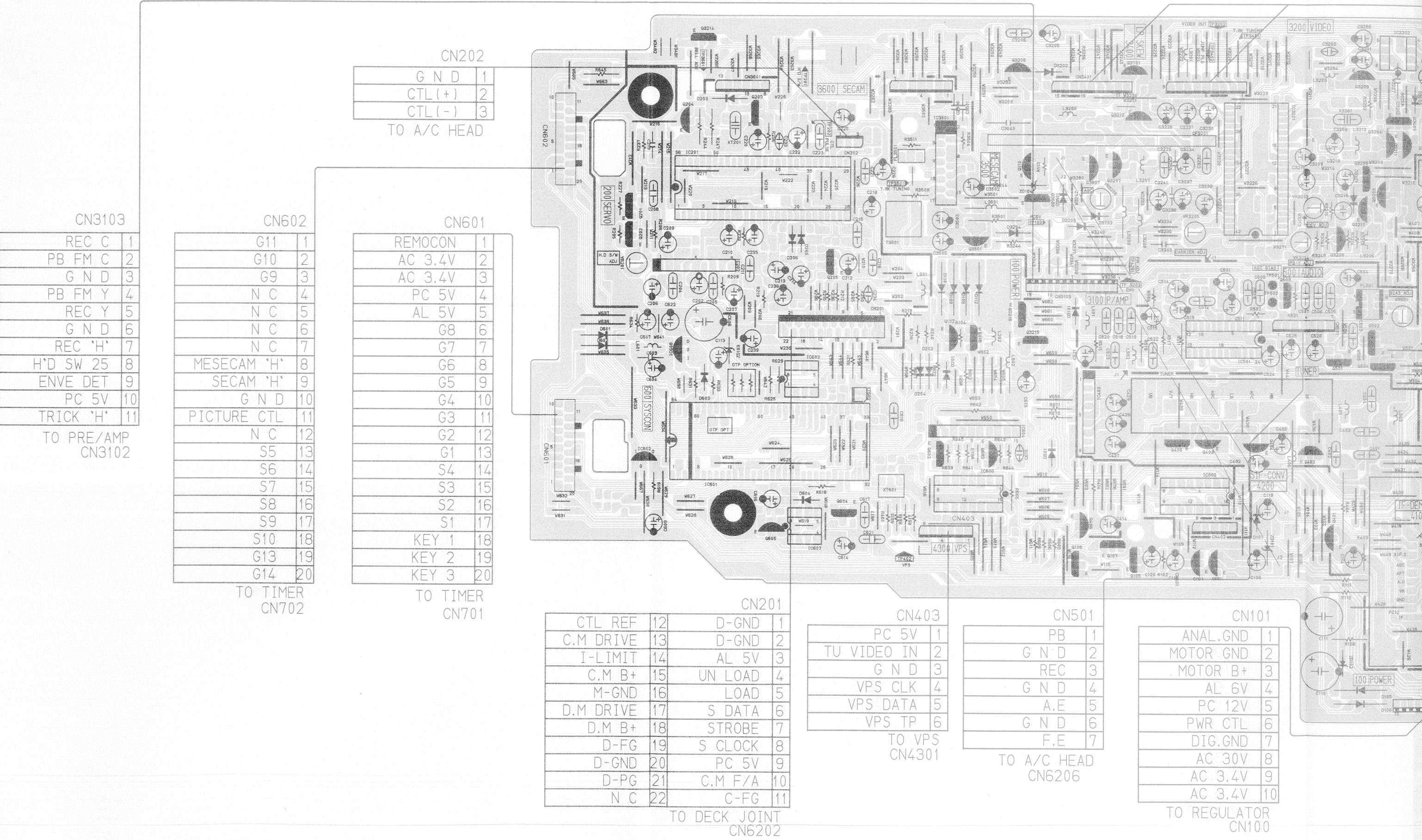
CN3101

1	CH 2
2	G N D
3	CH 1
4	COMMON

TO DRUM

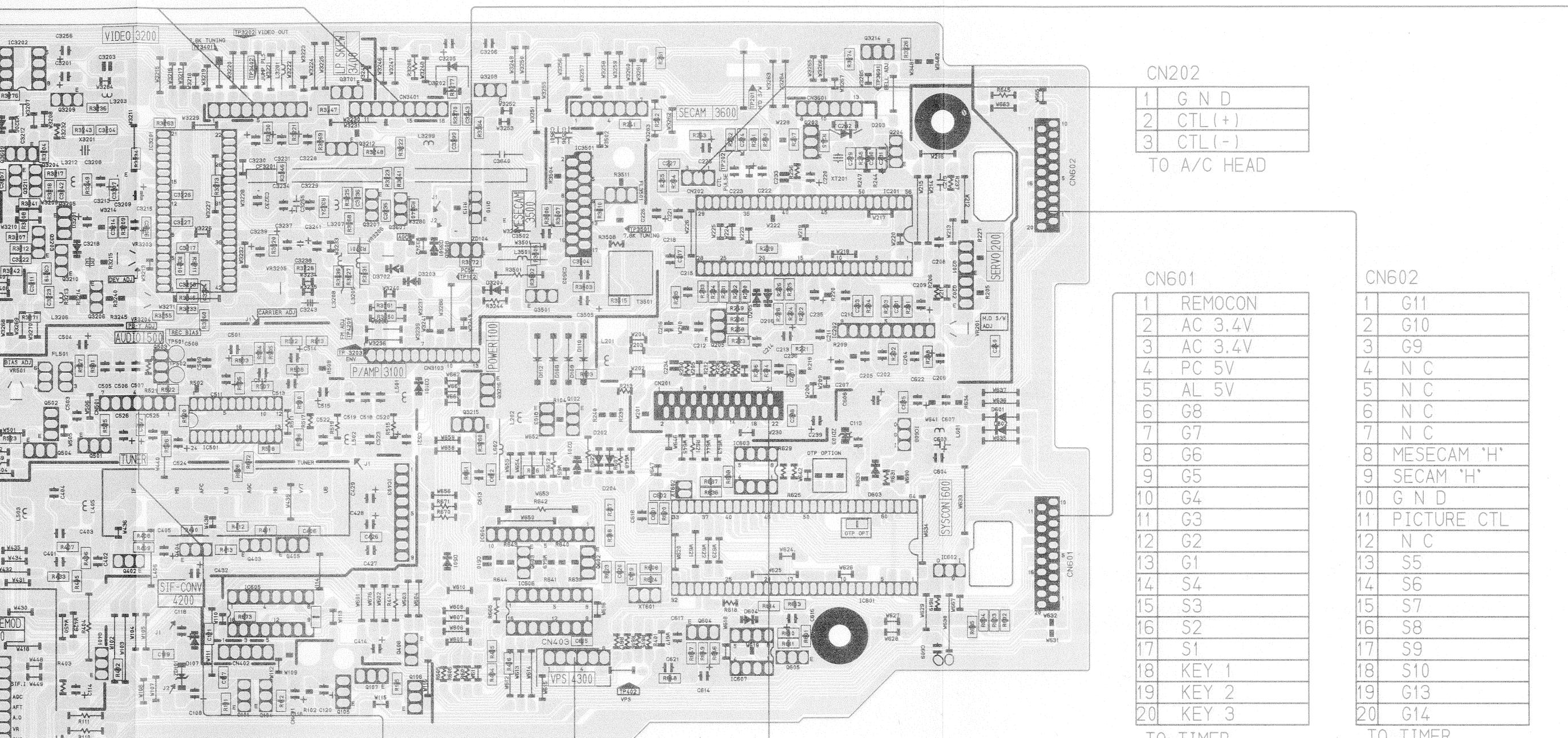


9-8. Main (Top Side)



9-8.





CN101

1	ANAL.GND
2	MOTOR GND
3	MOTOR B+
4	AL 6V
5	PC 12V
6	PWR CTL
7	DIG.GND
8	AC 30V
9	AC 3.4V
10	AC 3.4V

TO REGULATOR
CN100

CN501

1	PB
2	G N D
3	REC
4	G N D
5	A.E
6	G N D
7	F.E

TO A/C HEAD
CN6206

CN403

1	PC 5V
2	TU VIDEO IN
3	G N D
4	VPS CLK
5	VPS DATA
6	VPS TP

TO VPS
CN4301

CN201

1	D-GND	12	CTL REF
2	D-GND	13	C.M DRIVE
3	AL 5V	14	I-LIMIT
4	UN LOAD	15	C.M B+
5	LOAD	16	M-GND
6	S DATA	17	D.M DRIVE
7	STROBE	18	D.M B+
8	S CLOCK	19	D-FG
9	PC 5V	20	D-GND
10	C.M F/A	21	D-PG
11	C-FG	22	N C

TO DECK JOINT
CN6202

CN202

1	G N D
2	CTL (+)
3	CTL (-)

TO A/C HEAD

CN601

1	REMOCON
2	AC 3.4V
3	AC 3.4V
4	PC 5V
5	AL 5V
6	G8
7	G7
8	G6
9	G5
10	G4
11	G3
12	G2
13	G1
14	S4
15	S3
16	S2
17	S1
18	KEY 1
19	KEY 2
20	KEY 3

TO TIMER
CN701

CN602

1	G11
2	G10
3	G9
4	N C
5	N C
6	N C
7	N C
8	MESECAM 'H'
9	SECAM 'H'
10	G N D
11	PICTURE CTL
12	N C
13	S5
14	S6
15	S7
16	S8
17	S9
18	S10
19	G13
20	G14

TO TIMER
CN702

CN3103

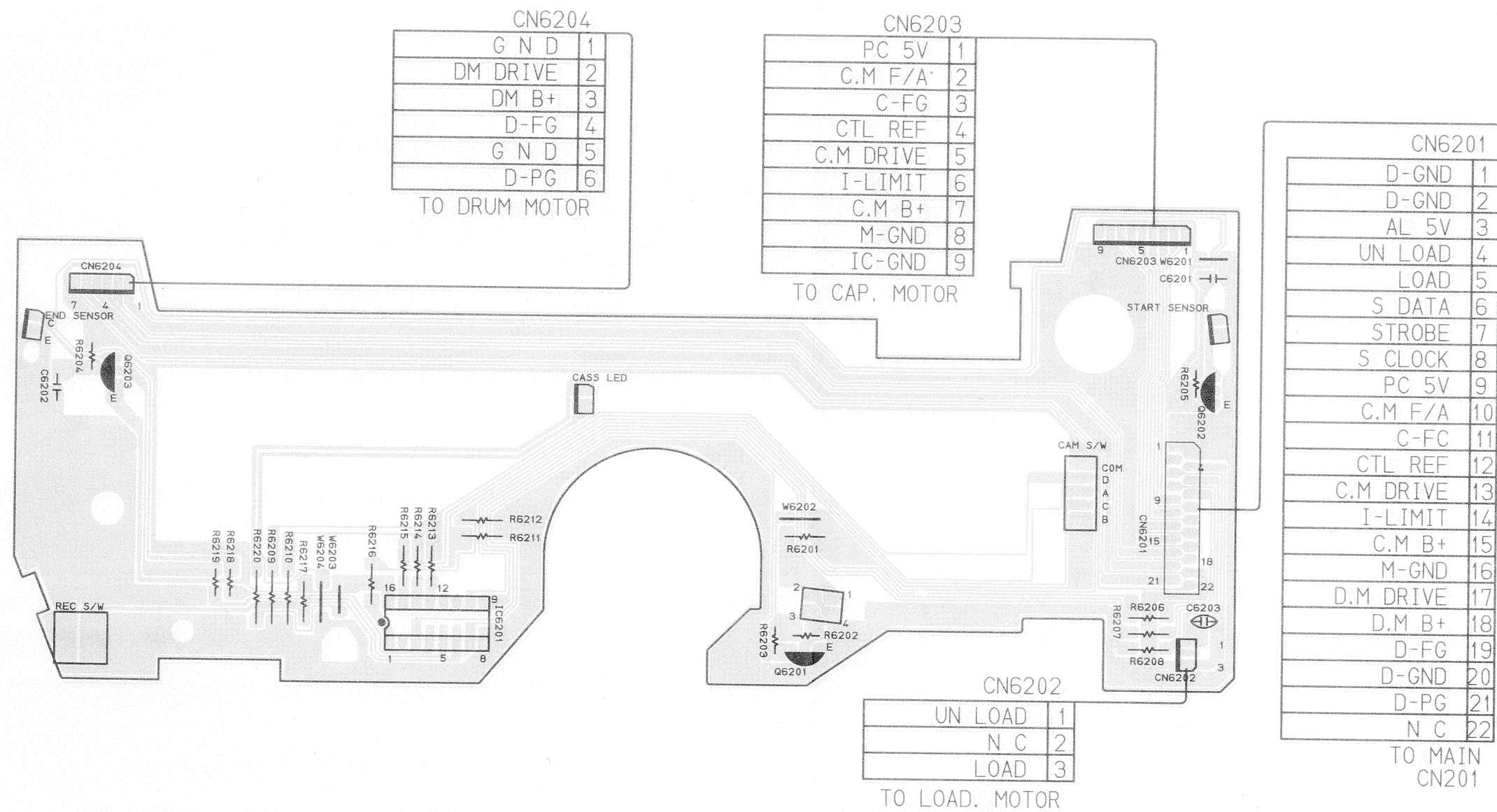
1	REC C
2	PB FM C
3	G N D
4	PB FM Y
5	REC Y
6	G N D
7	REC 'H'
8	H'D SW 25
9	ENVE DET
10	PC 5V
11	TRICK 'H'

TO PRE/AMP
CN3102

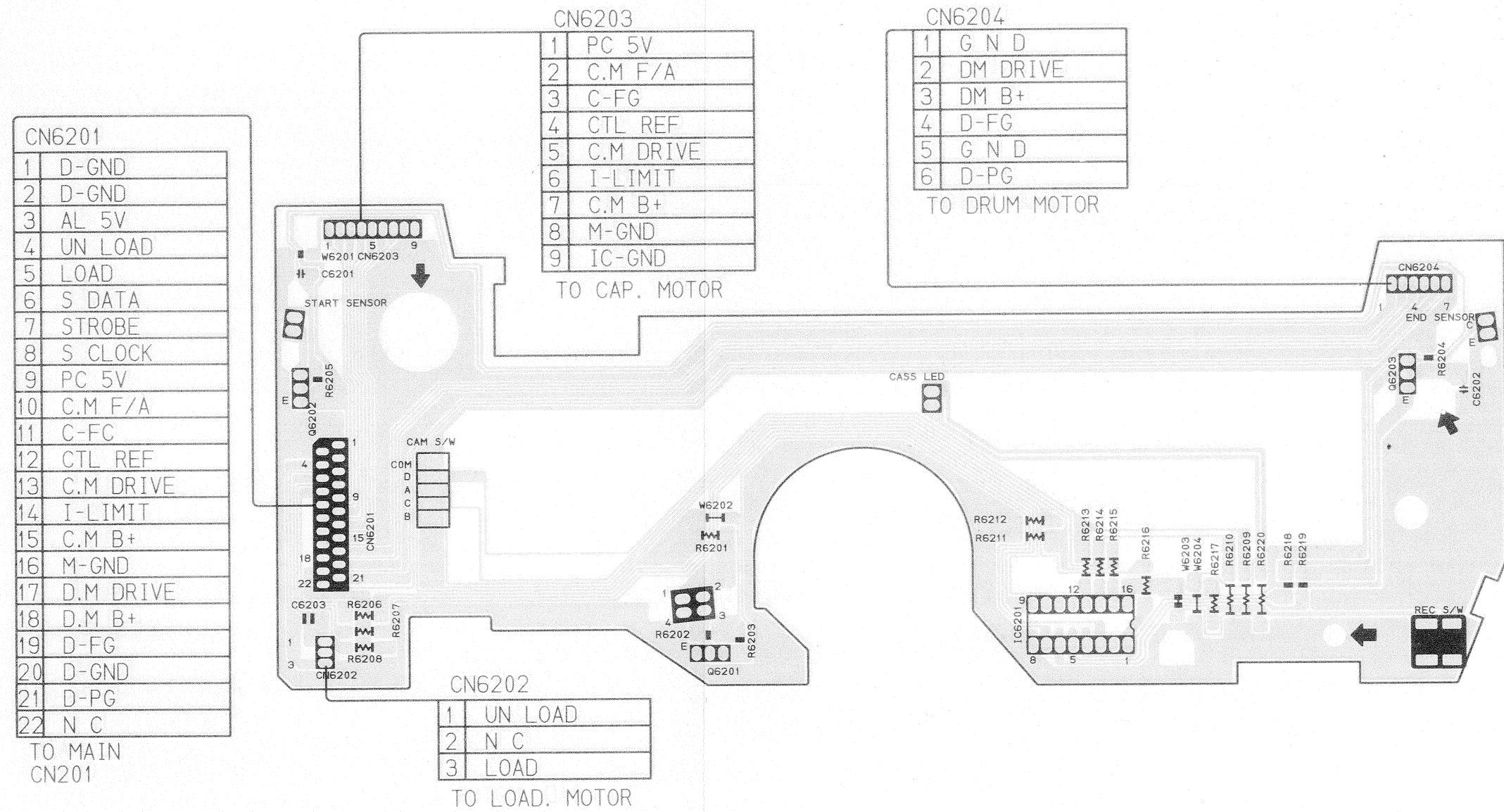
9-9. Deck Joint (Top Side)

(0612 motor) total 1024

9-9



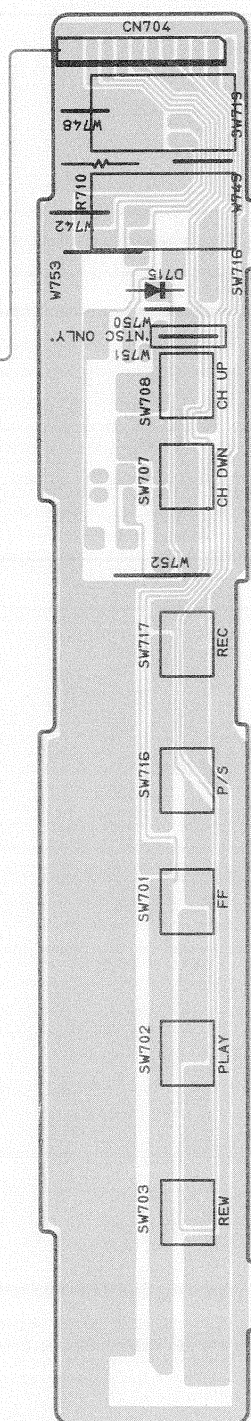
9-9. Deck Joint (Bottom Side)



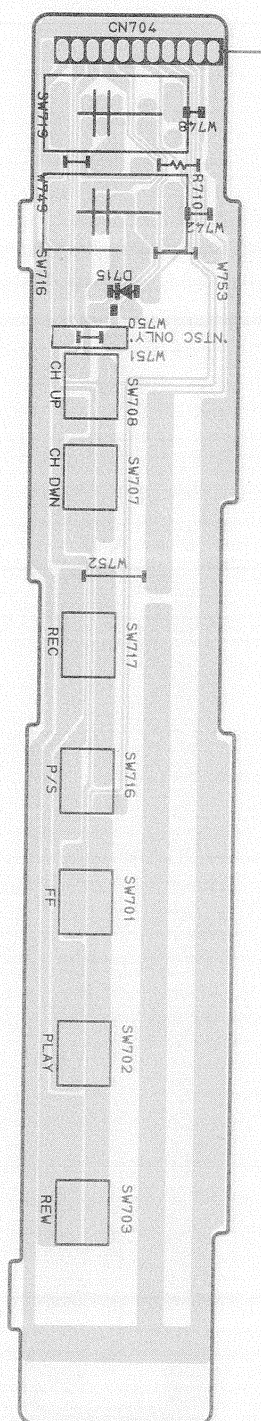
9-10. Function (Top Side)
(VK-3260/VK-3230)

CN704	
G N D	1
KEY3	2
PC 5V	3
S1	4
S6	5
S7	6
N C	7
SECAM 'H'	8
KEY2	9
S4	10
KEY1	11
PICTURE CTL	12

TO TIMER
CN703



9-10. Function (Bottom Side)
(VK-3260/VK-3230)

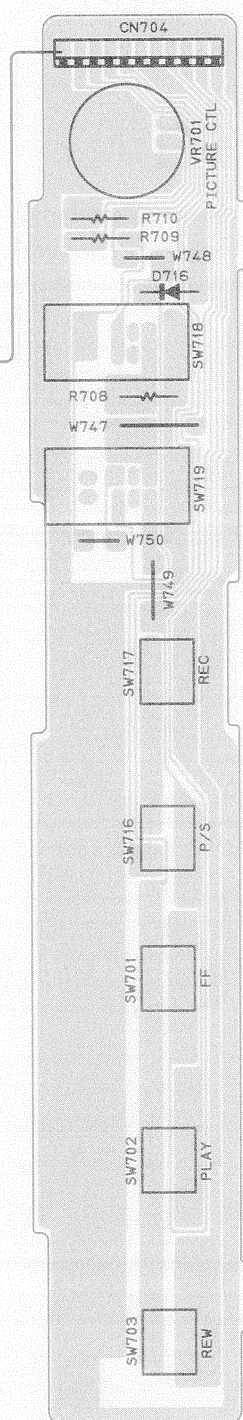


CN704

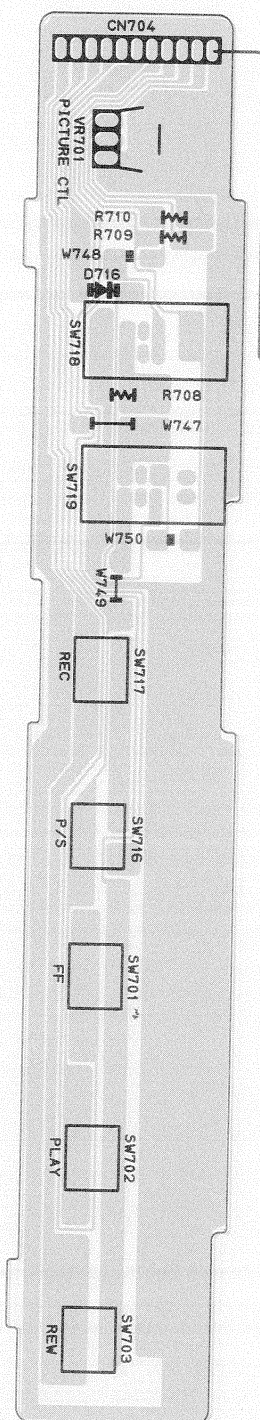
1	G N D
2	KEY3
3	PC 5V
4	S1
5	S6
6	S7
7	N C
8	SECAM 'H'
9	KEY2
10	S4
11	KEY1
12	PICTURE CTL

TO TIMER
CN703

TO TIMER
CN703



9-11. Function (Bottom Side)
(VK-3261/VK-3231)

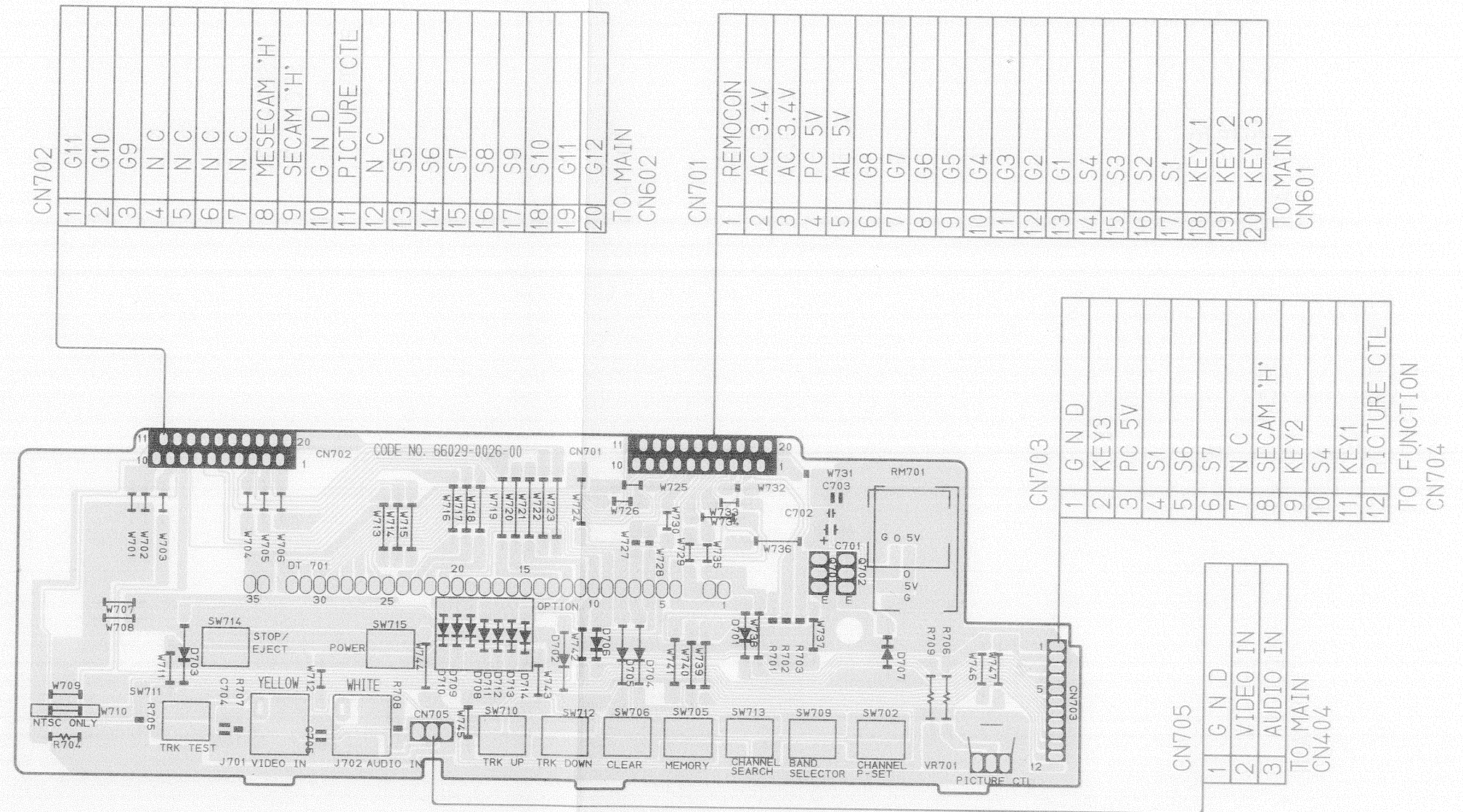


CN704

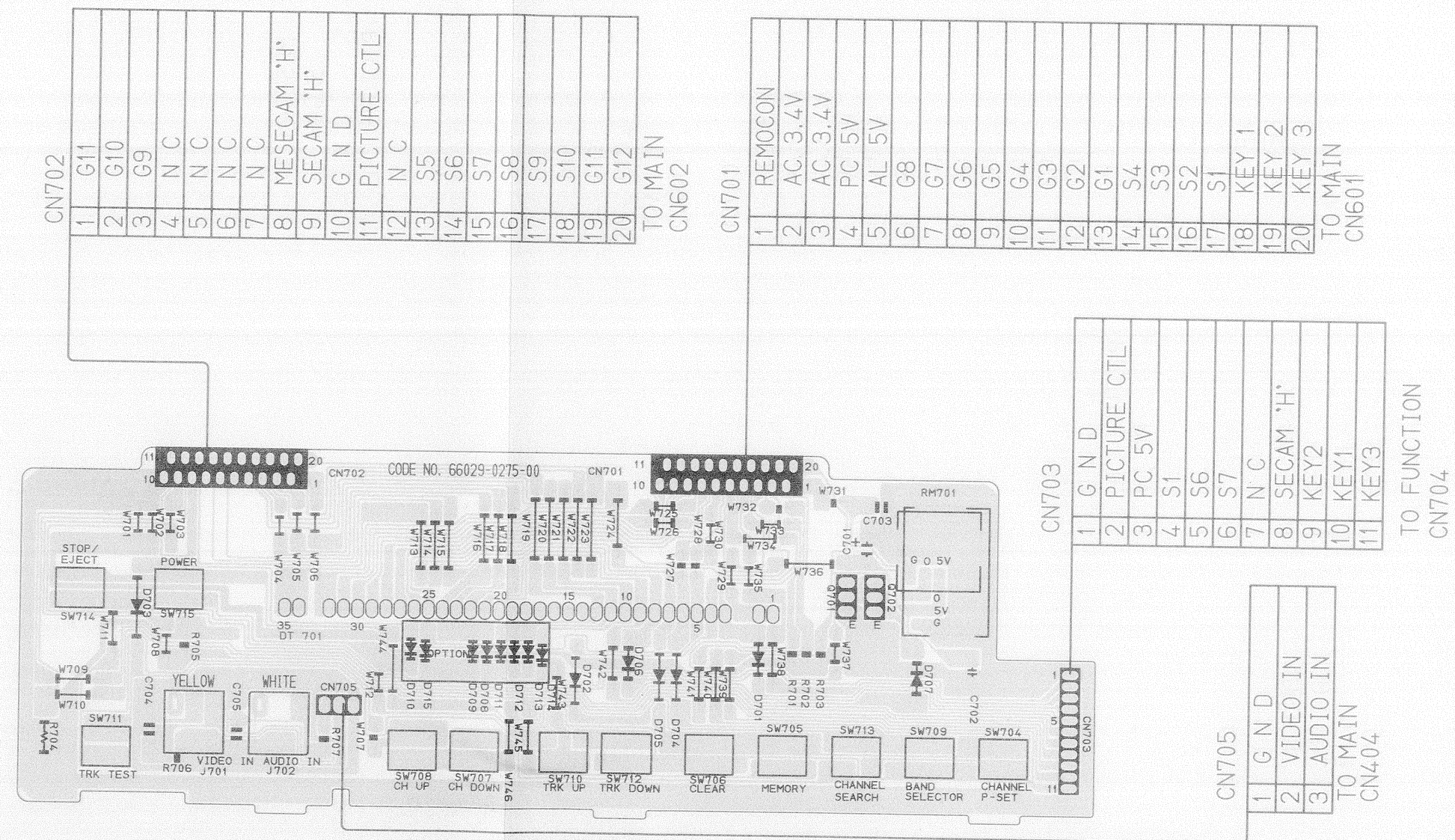
1	G N D
2	PICTURE CTL
3	PC 5V
4	S1
5	S6
6	S7
7	N C
8	SECAM 'H'
9	KEY2
10	KEY1
11	KEY3

TO TIMER
CN703

9-12. Timer (Bottom Side)
(VK-3260/VK-3230)



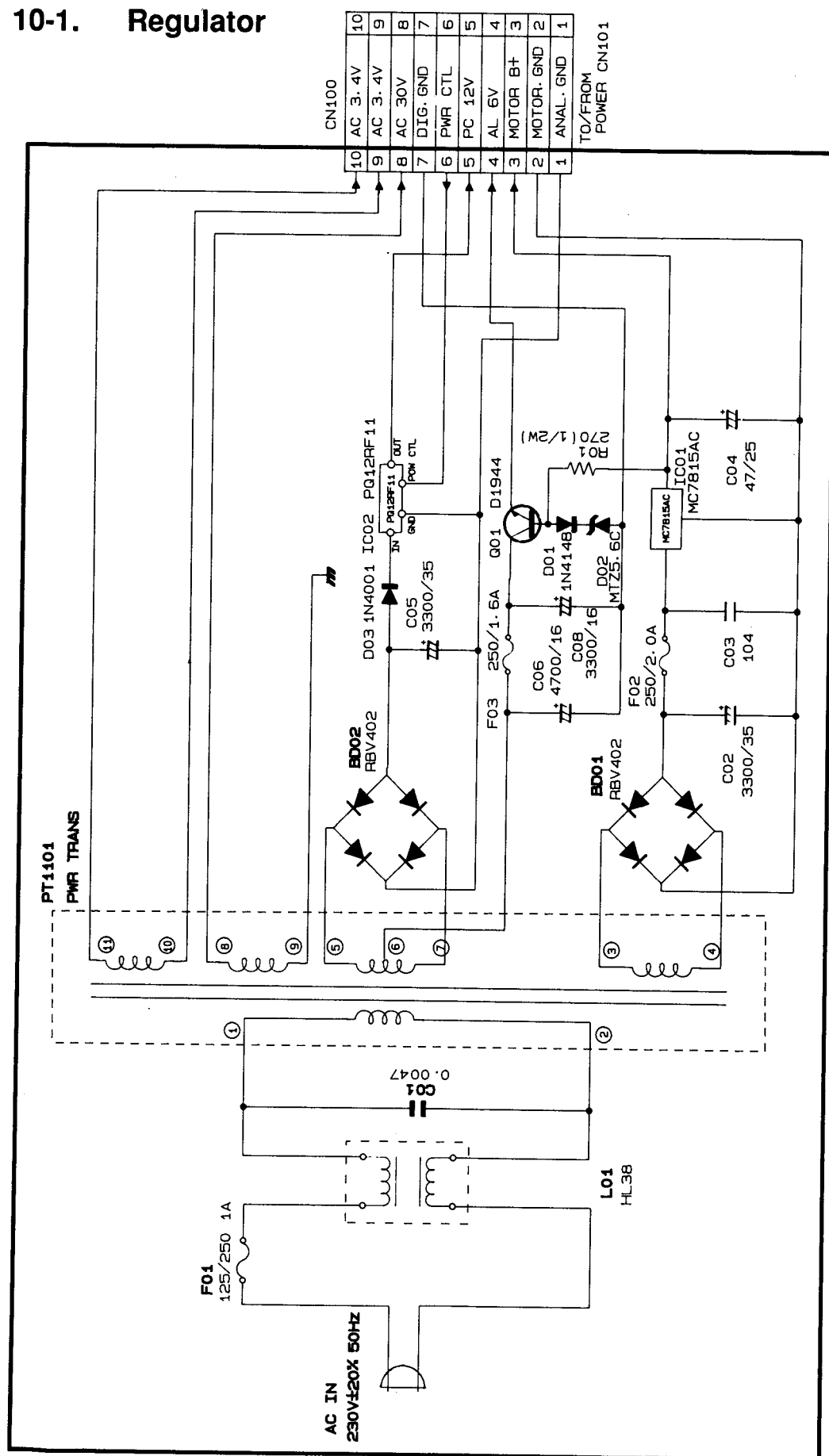
9-13. Timer (Bottom Side)
(VK-3261/VK-3231)



10. SCHEMATIC DIAGRAMS

	Page
10-1. Regulator - - - - -	10-2
10-2. Power - - - - -	10-3
10-3. System Control - - - - -	10-4
10-4. Servo - - - - -	10-6
10-5. Video/Buffer - - - - -	10-8
10-6. Audio - - - - -	10-10
10-7. Tuner/IF-PACK, SOUND DUAL - - - - -	10-12
10-8. SECAM COLOR - - - - -	10-13
10-9. Pre-Amp - - - - -	10-14
10-10. O.S.D - - - - -	10-16
10-11. Function/Timer (VK-3260/VK-3230) - - - - -	10-18
10-12. Function/Timer (VK-3261/VK-3231) - - - - -	10-19
10-13. Deck Joint - - - - -	10-20
10-14. LCD Remote Control - - - - -	10-21
10-15. NOT LCD Remote Control - - - - -	10-22

10-1. Regulator



REGULATOR

IMPORTANT SAFETY NOTICES
Components identified with the mark Δ have the special characteristics for safety when replacing any of these components. Use only the same type.

NOTE: Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

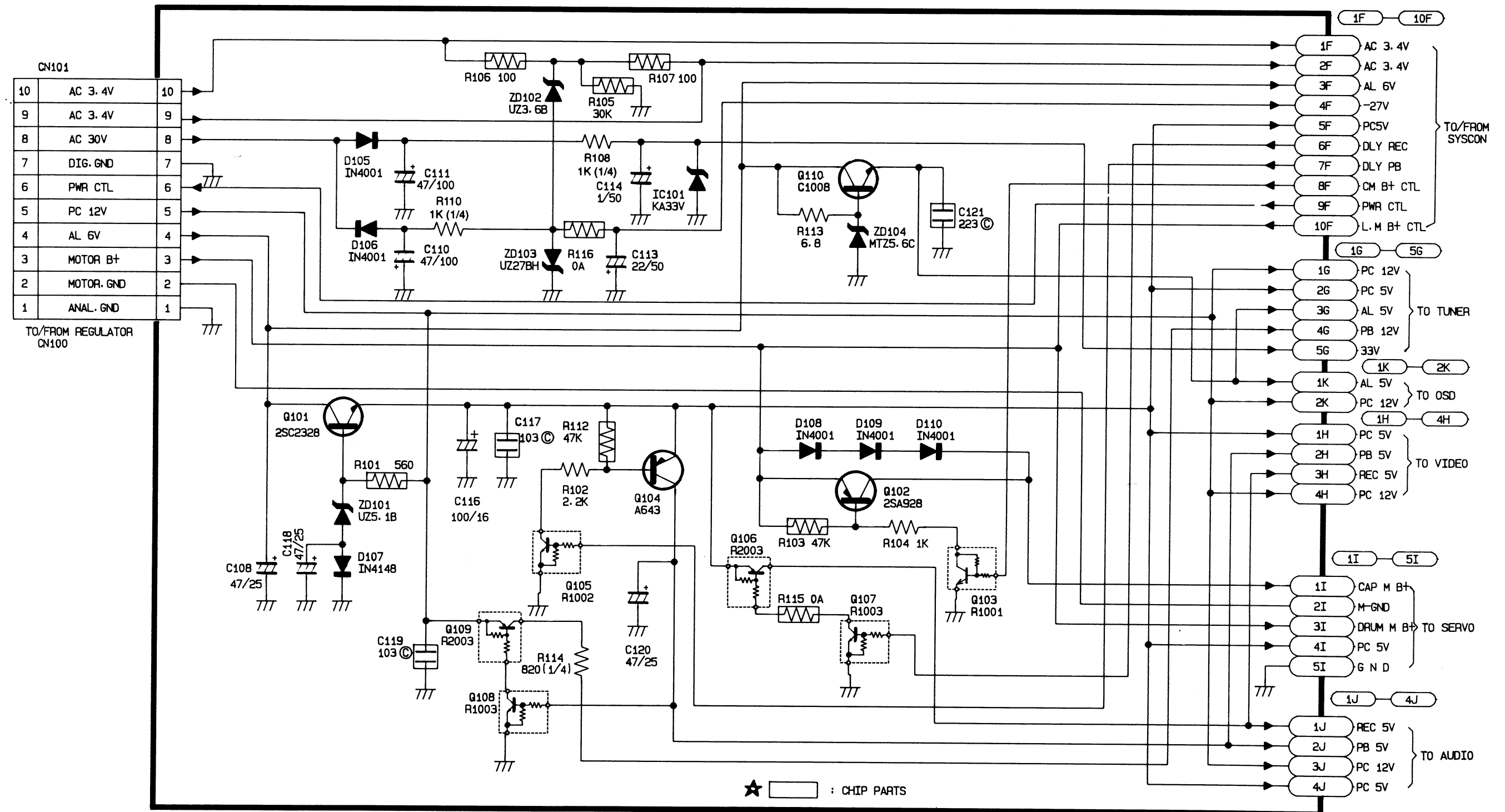
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

POWER

POWER

POWER

10-2. Power



SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

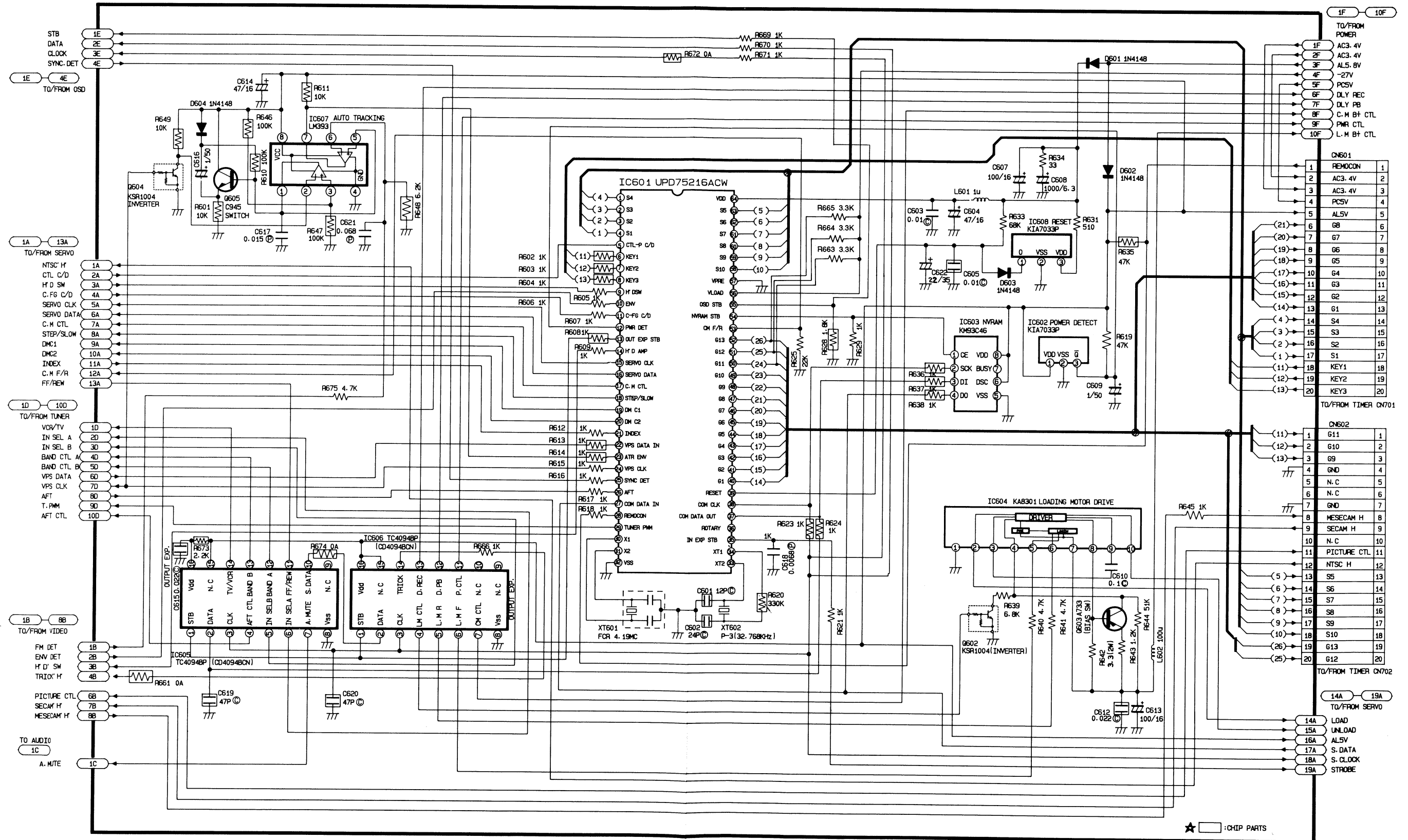
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

SYSTEM CONTROL

SYSTEM CONTROL

SYSTEM CONTROL

10-3. System Control



SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

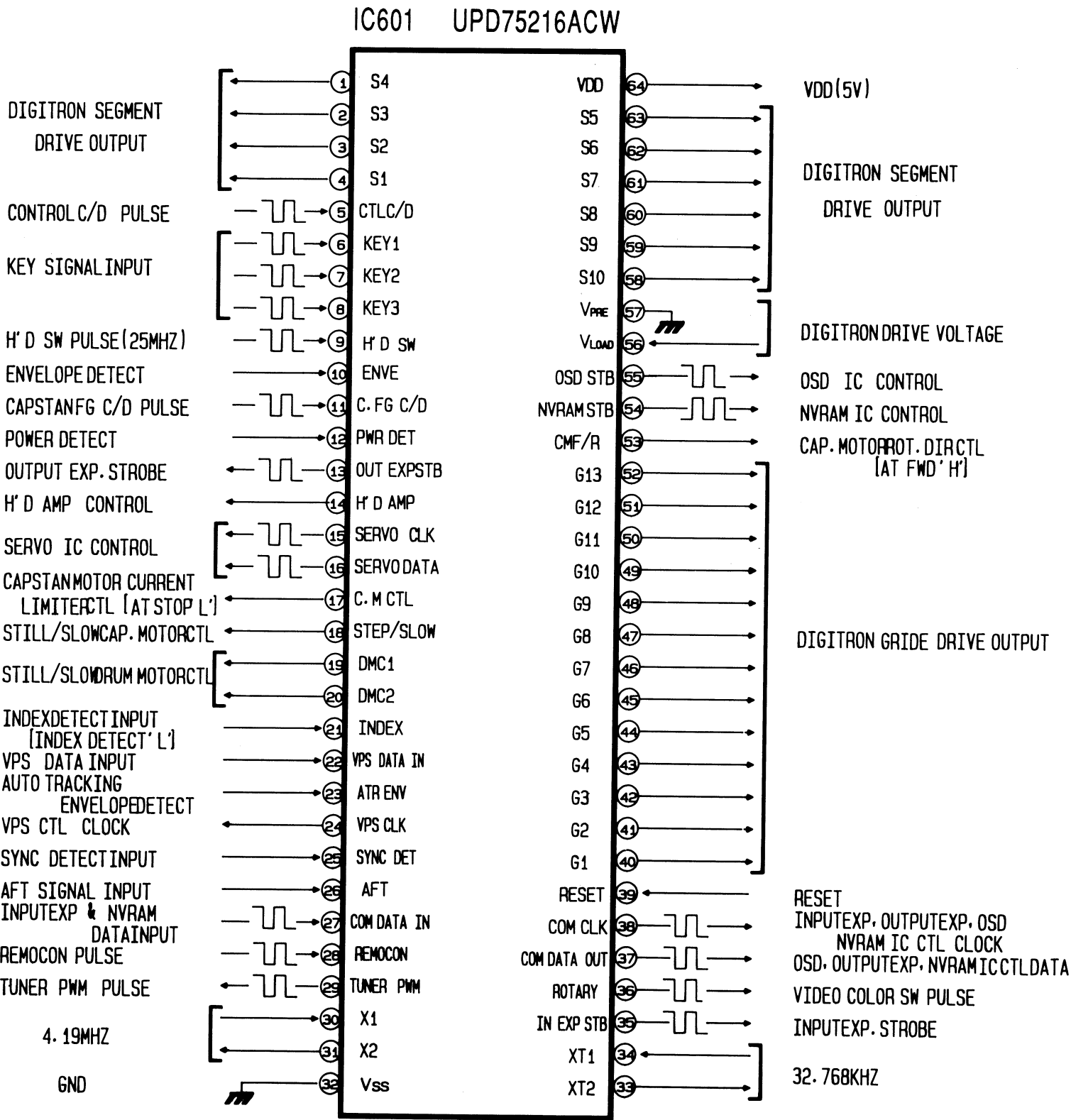
SYSTEM CONTROL

IC601							
MODE PIN NO	STOP	REC	PLAY	MODE PIN NO	STOP	REC	PLAY
PIN 1	-15.7	-18.2	-22.5	PIN 33	1.5	1.5	1.5
PIN 2	-15.6	-20.5	-22.5	PIN 34	2.6	2.6	2.6
PIN 3	-15.6	-18.2	-18.2	PIN 35	5.2	4.2	4.2
PIN 4	-11.4	-16.1	-20.3	PIN 36	0	0.9-4.2	0.9-4.2
PIN 5	5.0	5.0	1.4-4.6	PIN 37	0	0.3	0.2
PIN 6	1.0	0.7	0.6	PIN 38	0	0.2	0.2
PIN 7	0.4	0	0.6	PIN 39	5.2	5.2	5.2
PIN 8	0.4	0	0.6	PIN 40	-23.4	-23.6	-23.8
PIN 9	0	0.9-4.2	0.9-4.2	PIN 41	-23.4	-23.6	-23.8
PIN 10	4.0	0	0	PIN 42	-23.4	-23.6	-23.8
PIN 11	0	2.5	2.5	PIN 43	-23.4	-23.6	-23.8
PIN 12	5.1	5.1	5.1	PIN 44	-23.4	-23.6	-23.8
PIN 13	0	0	0	PIN 45	-23.4	-23.6	-23.8
PIN 14	0	0	0	PIN 46	-23.4	-23.6	-23.8
PIN 15	0.2	0.2	0.2	PIN 47	-23.4	-23.6	-23.8
PIN 16	0.2	0.2	0.2	PIN 48	-23.4	-23.6	-23.8
PIN 17	0.1	4.9	5.0	PIN 49	-23.4	-23.6	-23.8
PIN 18	0	0	0	PIN 50	-23.4	-23.8	-24.0
PIN 19	2.4	2.4	2.4	PIN 51	-23.6	-23.8	-24.0
PIN 20	0.5	2.4	2.4	PIN 52	-23.6	-23.8	-24.0
PIN 21	5.0	5.0	5.0	PIN 53	5.2	5.2	5.2
PIN 22	5.0	5.0	5.0	PIN 54	0	0	0
PIN 23	5.2	5.1	5.1	PIN 55	5.1	5.1	5.1
PIN 24	5.2	5.2	5.1	PIN 56	-24.9	-25.1	-25.3
PIN 25	0	4.2	4.2	PIN 57	0	0	0
PIN 26	0	1.1	0	PIN 58	-22.7	-23.0	-23.0
PIN 27	0.6	4.8	4.8	PIN 59	-20.4	-22.8	-23.0
PIN 28	5.0	5.1	5.1	PIN 60	-20.4	-20.6	-23.0
PIN 29	4.5	2.6	4.5	PIN 61	-11.7	-9.4	-9.4
PIN 30	2.7	2.6	2.6	PIN 62	-13.9	-16.0	-16.0
PIN 31	2.8	2.8	2.8	PIN 63	-13.9	-11.7	-18.3
PIN 32	0	0	0	PIN 64	5.2	5.2	5.2

IC605			
MODE PIN NO	STOP	REC	PLAY
PIN 1	0	0	0
PIN 2	0.1	0.4	0.3
PIN 3	0.1	0.3	0.3
PIN 4	0	0	0
PIN 5	0	0	0
PIN 6	0	0	0
PIN 7	5.0	0	0
PIN 8	0	0	0
PIN 9	0	0.3	0.2
PIN 10	0	0.3	0.2
PIN 11	0	0	0
PIN 12	4.7	4.7	4.7
PIN 13	0	4.7	0
PIN 14	5.0	5.0	5.0
PIN 15	5.0	5.0	5.0
PIN 16	5.0	5.0	5.0

IC606			
MODE PIN NO	STOP	REC	PLAY
PIN 1	0	0	0
PIN 2	0	0.3	0.2
PIN 3	0.1	0.3	0.3
PIN 4	5.1	5.1	5.1
PIN 5	4.9	4.9	4.9
PIN 6	4.9	4.9	4.9
PIN 7	0	0	0
PIN 8	0	0	0
PIN 9	5.2	4.1	4.1
PIN 10	5.2	4.1	4.1
PIN 11	5.2	5.2	5.2
PIN 12	0	0	5.0
PIN 13	0	5.1	0
PIN 14	5.1	0	0
PIN 15	5.2	5.2	5.2
PIN 16	5.2	5.2	5.2

SYSTEM CONTROL

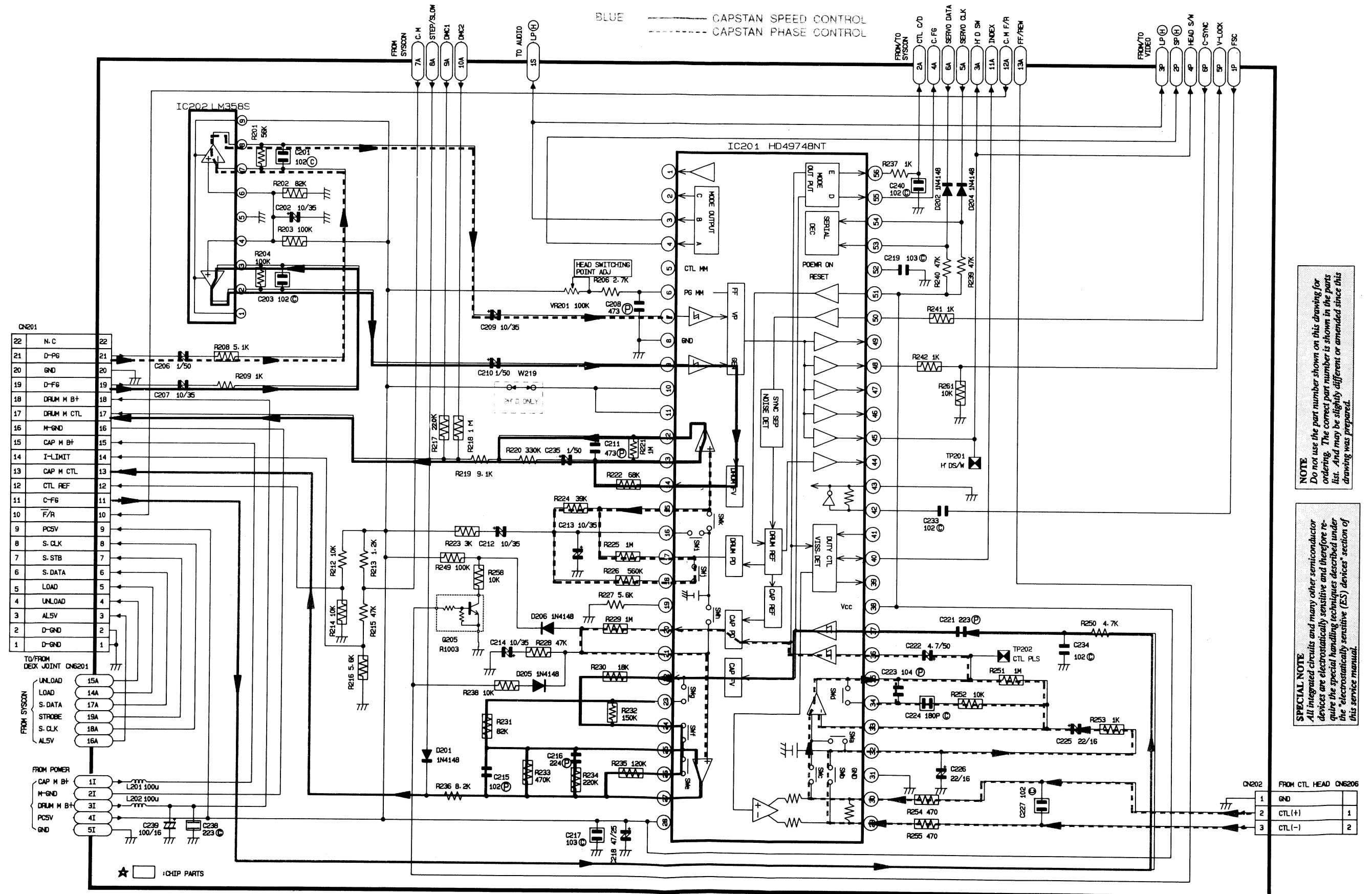


SYSTEM CONTROL

10-4. Servo

RED ——— DRUM SPEED CONTROL
----- DRUM PHASE CONTROL

BLUE ————— CAPSTAN SPEED CONTROL
 - - - - - CAPSTAN PHASE CONTROL



NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

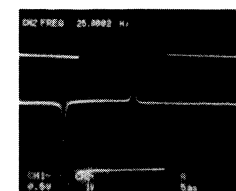
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

SERVO

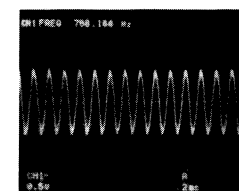
SERVO

SERVO

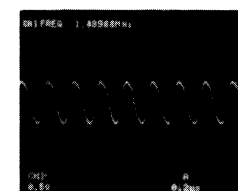
IC201							
MODE PIN NO	STOP	REC	PLAY	MODE PIN NO	STOP	REC	PLAY
PIN 1	-	-	-	PIN 29	2.5	2.5	2.5
PIN 2	0	0	0	PIN 30	2.5	2.5	2.5
PIN 3	0	0	0	PIN 31	0	0	0
PIN 4	5.0	5.0	5.0	PIN 32	2.5	2.5	2.5
PIN 5	0	0	0	PIN 33	2.5	2.5	2.5
PIN 6	0.4	0.4	0.4	PIN 34	0	2.5	2.5
PIN 7	2.1	2.1	2.1	PIN 35	2.5	2.5	2.5
PIN 8	0	0	0	PIN 36	2.5	2.5	2.5
PIN 9	2.7	2.7	2.7	PIN 37	2.7	2.7	2.6
PIN 10	2.6	2.6	2.6	PIN 38	5.0	5.0	5.0
PIN 11	2.6	2.6	2.6	PIN 39	-	-	-
PIN 12	2.6	2.6	2.6	PIN 40	5.0	5.0	5.0
PIN 13	2.5	2.5	2.5	PIN 41	-	-	-
PIN 14	2.5	2.5	2.5	PIN 42	2.6	2.6	2.6
PIN 15	2.5	2.5	2.5	PIN 43	2.6	2.6	2.6
PIN 16	2.5	2.5	2.5	PIN 44	-	-	-
PIN 17	2.5	2.5	2.5	PIN 45	0-5	0-5	0-5
PIN 18	2.4	2.4	2.4	PIN 46	-	-	-
PIN 19	0.9	0.9	0.9	PIN 47	-	-	-
PIN 20	4.9	2.5	2.6	PIN 48	0.1	0.1	0.1
PIN 21	2.5	2.6	2.6	PIN 49	-	-	-
PIN 22	0	2.5	2.5	PIN 50	0.6	0.6	0.6
PIN 23	0	2.5	2.5	PIN 51	5.0	5.0	5.0
PIN 24	0	2.5	2.5	PIN 52	5.0	5.0	5.0
PIN 25	0.8	2.5	2.5	PIN 53	0.7	0.7	0.7
PIN 26	4.9	2.7	2.7	PIN 54	0.8	0.7	0.8
PIN 27	4.9	2.7	2.7	PIN 55	0	2.5	2.5
PIN 28	5.0	5.0	5.0	PIN 56	5.0	5.0	0-5



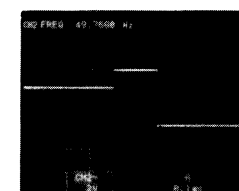
IC201-35
2Vp-p
PB



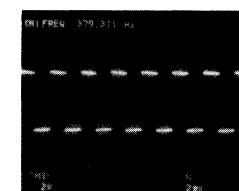
IC201-37
1.5Vp-p
PB



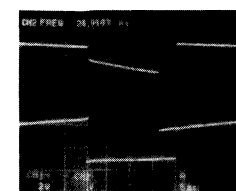
IC201-42
1Vp-p
PB



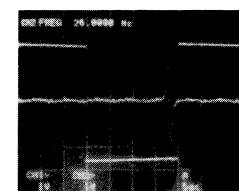
IC201-48
5Vp-p
STILL/SLOW



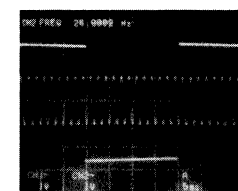
IC201-55
5Vp-p
PB



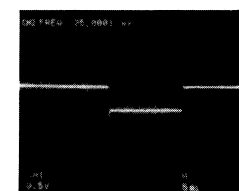
IC201-56
5Vp-p
PB



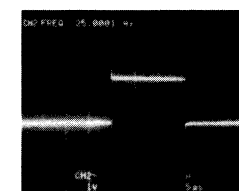
IC202-2
3Vp-p
PB



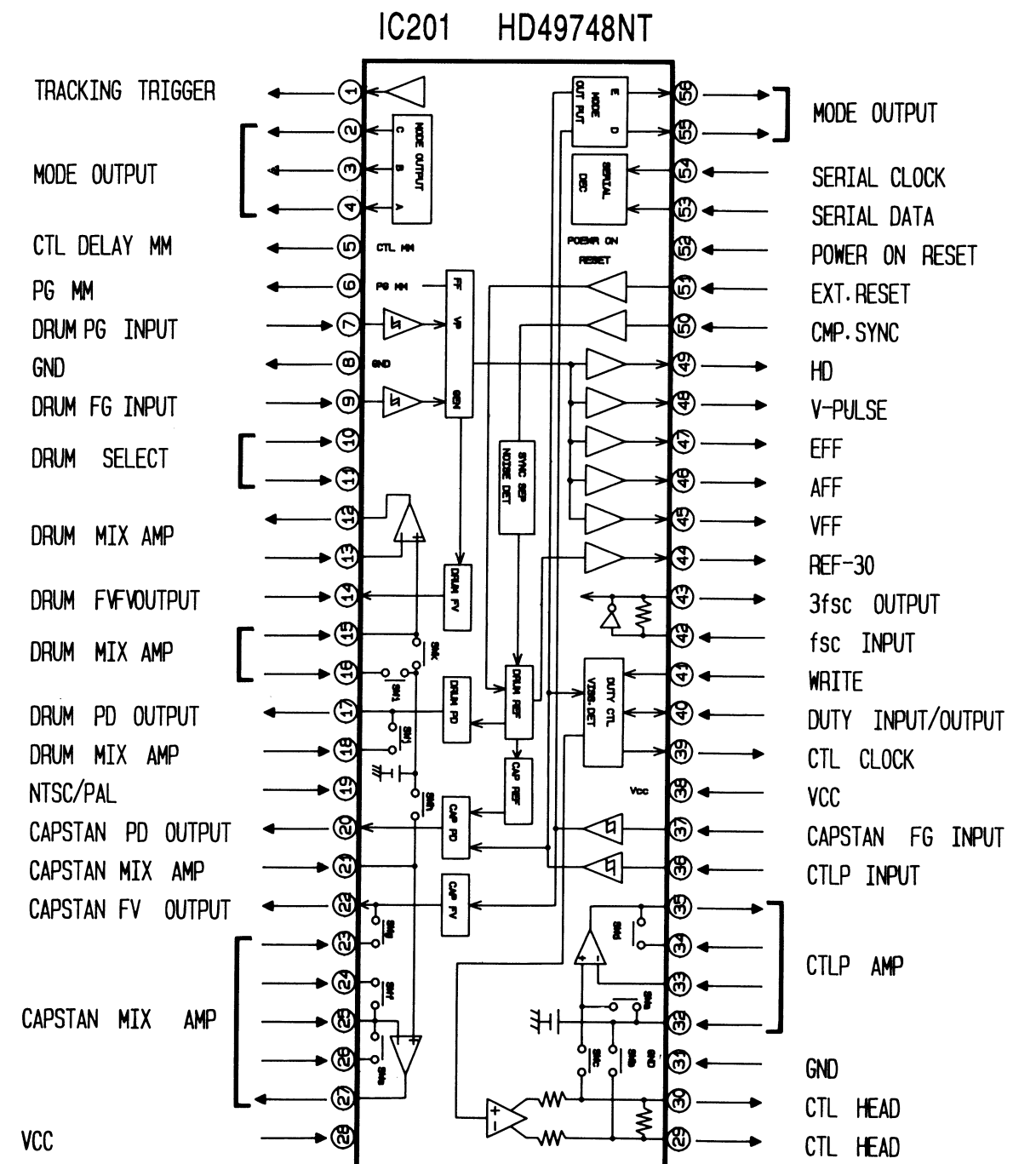
IC202-8
2Vp-p
PB



CN202-2
0.5Vp-p
REC



CN202-3
2Vp-p
REC

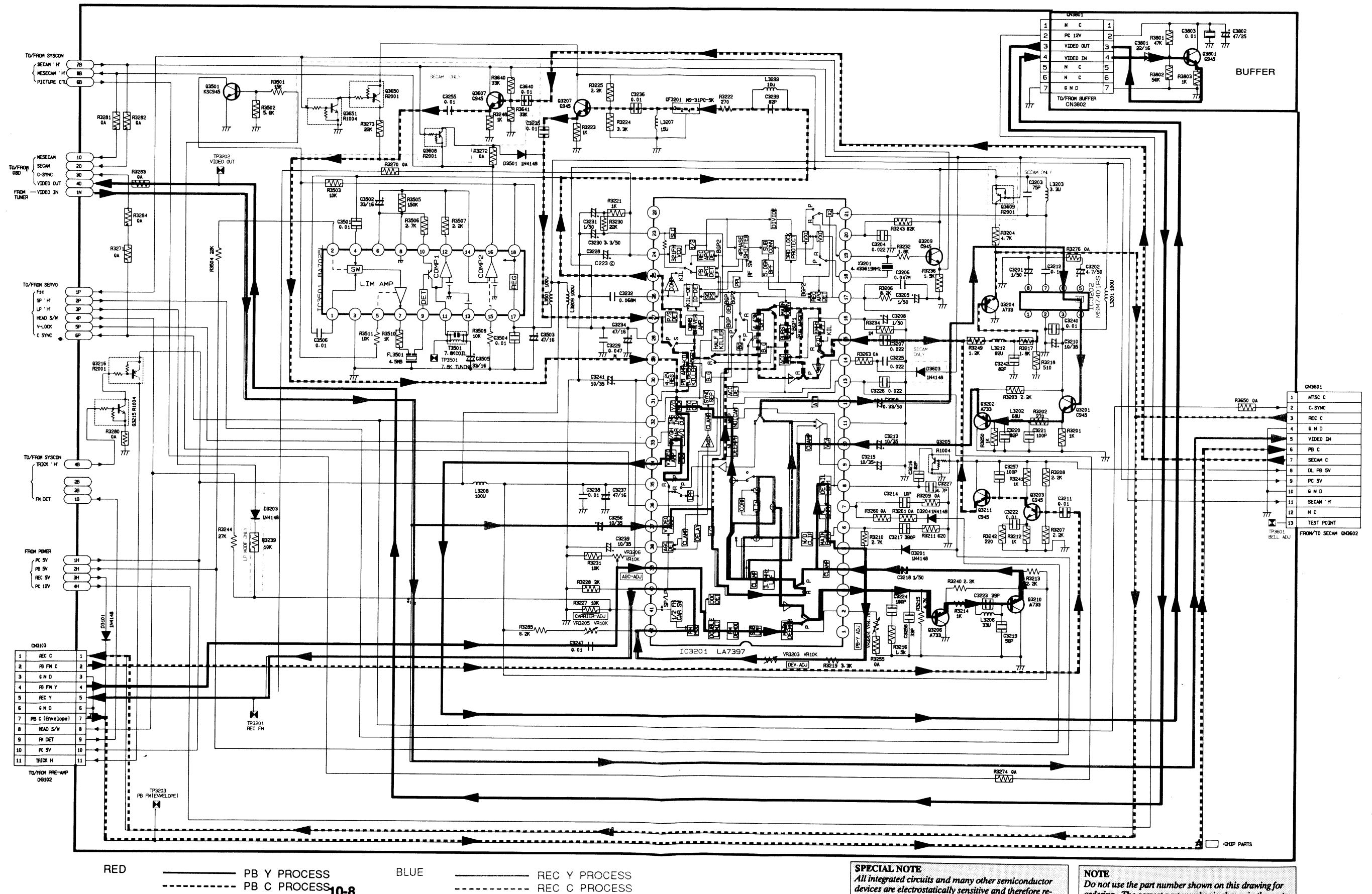


VIDEO

BUFFER

VIDEO

10-5. Video/Buffer



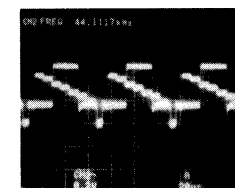
VIDEO

IC3201				
PIN NO	MODE	STOP	REC	PLAY
PIN 1		0.3	0.1	0.1
PIN 2		0	0	2.2
PIN 3		2.5	2.4	1.6
PIN 4		2.6	2.6	2.5
PIN 5		2.6	2.6	4.5
PIN 6		2.6	2.6	4.5
PIN 7		4.5	4.5	4.5
PIN 8		2.2	2.2	2.3
PIN 9		3.6	3.6	3.6
PIN 10		2.1	2.1	2.1
PIN 11		0	0	0
PIN 12		2.2	2.2	2.1
PIN 13		2.5	2.5	2.5
PIN 14		1.7	1.7	1.7
PIN 15		3.0	3.0	3.0
PIN 16		2.6	2.6	2.2
PIN 17		2.2	2.2	2.2
PIN 18		3.7	3.6	3.6
PIN 19		3.2	3.2	2.4
PIN 20		2.2	2.2	2.2
PIN 21		4.9	4.9	4.9
PIN 22		0	0	0
PIN 23		3.2	3.2	3.2
PIN 24		3.2	3.2	3.2
PIN 25		2.4	2.4	2.4
PIN 26		2.0	2.0	2.0
PIN 27		1.9	2.0	2.0
PIN 28		5.0	5.0	5.0
PIN 29		3.0	3.0	3.0
PIN 30		4.2	4.2	4.2
PIN 31		2.4	2.4	2.4
PIN 32		0.2	0.2	0.2
PIN 33		0	0	0
PIN 34		2.0	2.0	2.0
PIN 35		5.0	5.0	5.0
PIN 36		0.2	0.2	0.2
PIN 37		3.2	3.2	3.2
PIN 38		1.4	1.4	1.0
PIN 39		3.2	3.2	3.2
PIN 40		3.0	3.0	3.6
PIN 41		0.1	0.1	0.1
PIN 42		2.4	2.4	2.4

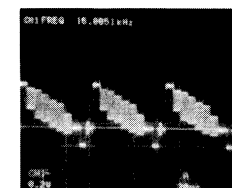
IC3501				
PIN NO	MODE	STOP	REC	PLAY
PIN 1		3.6	3.4	3.6
PIN 2		0	0	1.1
PIN 3		0	0	0
PIN 4		3.6	3.4	3.6
PIN 5		4.3	4.8	4.3
PIN 6		0	0	0
PIN 7		5.2	4.3	5.5
PIN 8		0	0	0
PIN 9		3.0	3.0	3.0
PIN 10		0	0	0
PIN 11		3.7	3.7	3.7
PIN 12		0	0	0
PIN 13		3.7	3.6	3.7
PIN 14		0	0	0
PIN 15		0	0	0
PIN 16		0	0	0
PIN 17		5.0	4.8	5.0
PIN 18		5.0	11.8	5.0

IC3202				
PIN NO	MODE	STOP	REC	PLAY
PIN 1		0	0	0
PIN 2		0	0	0
PIN 3		5.0	5.0	5.0
PIN 4		3.6	3.6	3.6
PIN 5		2.0	2.0	2.0
PIN 6		2.1	2.1	2.1
PIN 7		2.4	2.4	2.4
PIN 8		8.1	8.1	8.1

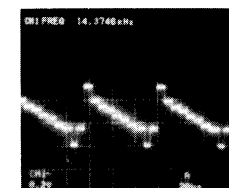
VIDEO



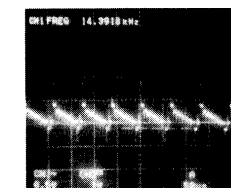
IC3201-3
0.5Vp-p
PB



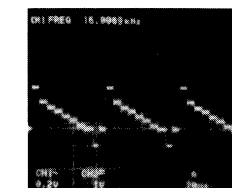
IC3201-3
0.55Vp-p
REC



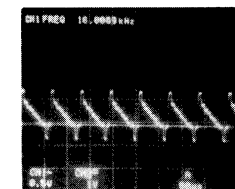
IC3201-4
0.5Vp-p
PB/REC



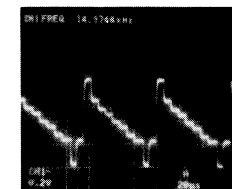
IC3201-5
1.2Vp-p
REC



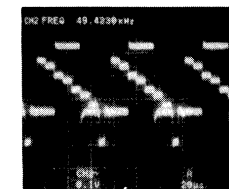
IC3201-6
0.5Vp-p
REC



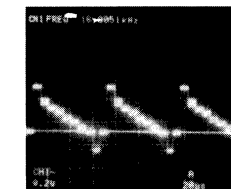
IC3201-7
1.0Vp-p
REC



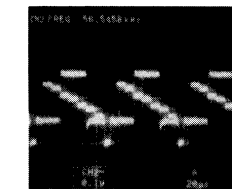
IC3201-8
0.6Vp-p
PB/REC



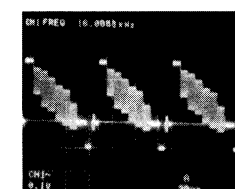
IC3201-10
0.5Vp-p
PB



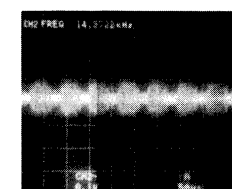
IC3201-10
0.6Vp-p
REC



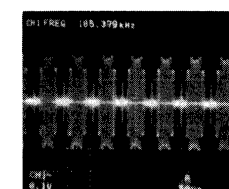
IC3201-12
0.4Vp-p
PB



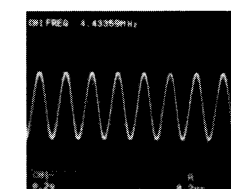
IC3201-12
0.38Vp-p
REC



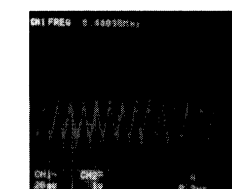
IC3201-15
0.15Vp-p
PB



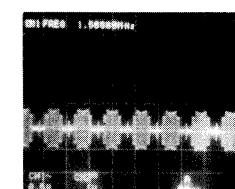
IC3201-15
0.4Vp-p
REC



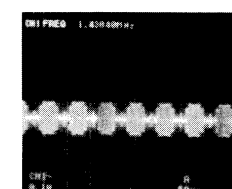
IC3201-18,19
0.55Vp-p
PB/REC



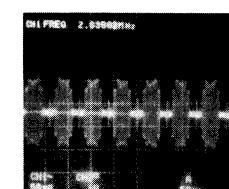
IC3201-21
40mVp-p
PB/REC



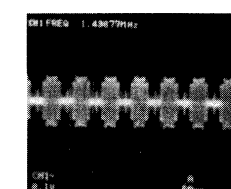
IC3201-25
0.8Vp-p
REC



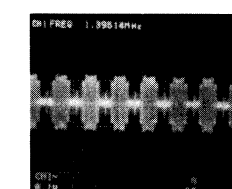
IC3201-27
0.15Vp-p
PB



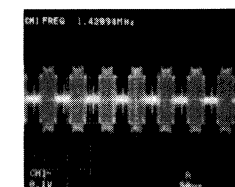
IC3201-27
150mVp-p
EE/REC



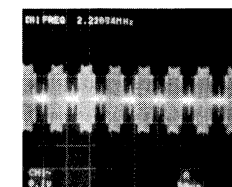
IC3201-29
0.2Vp-p
PB



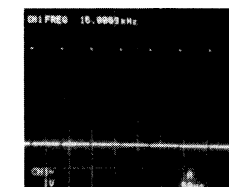
IC3201-29
0.24Vp-p
EE/REC



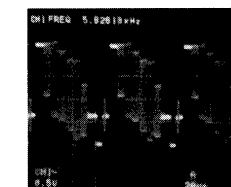
IC3201-31
0.3Vp-p
PB



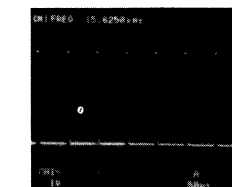
IC3201-31
0.3Vp-p
EE/REC



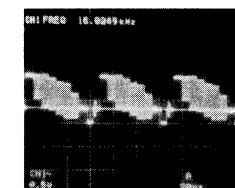
IC3201-32
4Vp-p
PB/REC



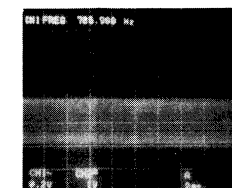
IC3201-34
2Vp-p
PB/REC



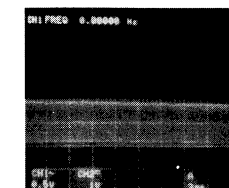
IC3201-36
4Vp-p
PB/REC



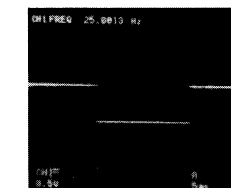
IC3201-37
1Vp-p
REC



IC3201-39
0.4Vp-p
PB



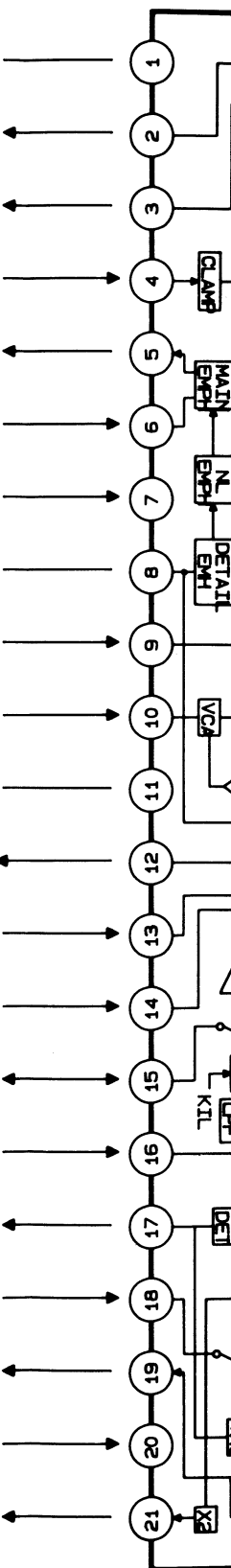
IC3201-40
1Vp-p
REC



IC3201-41
0.8Vp-p
PB/REC

VIDEO

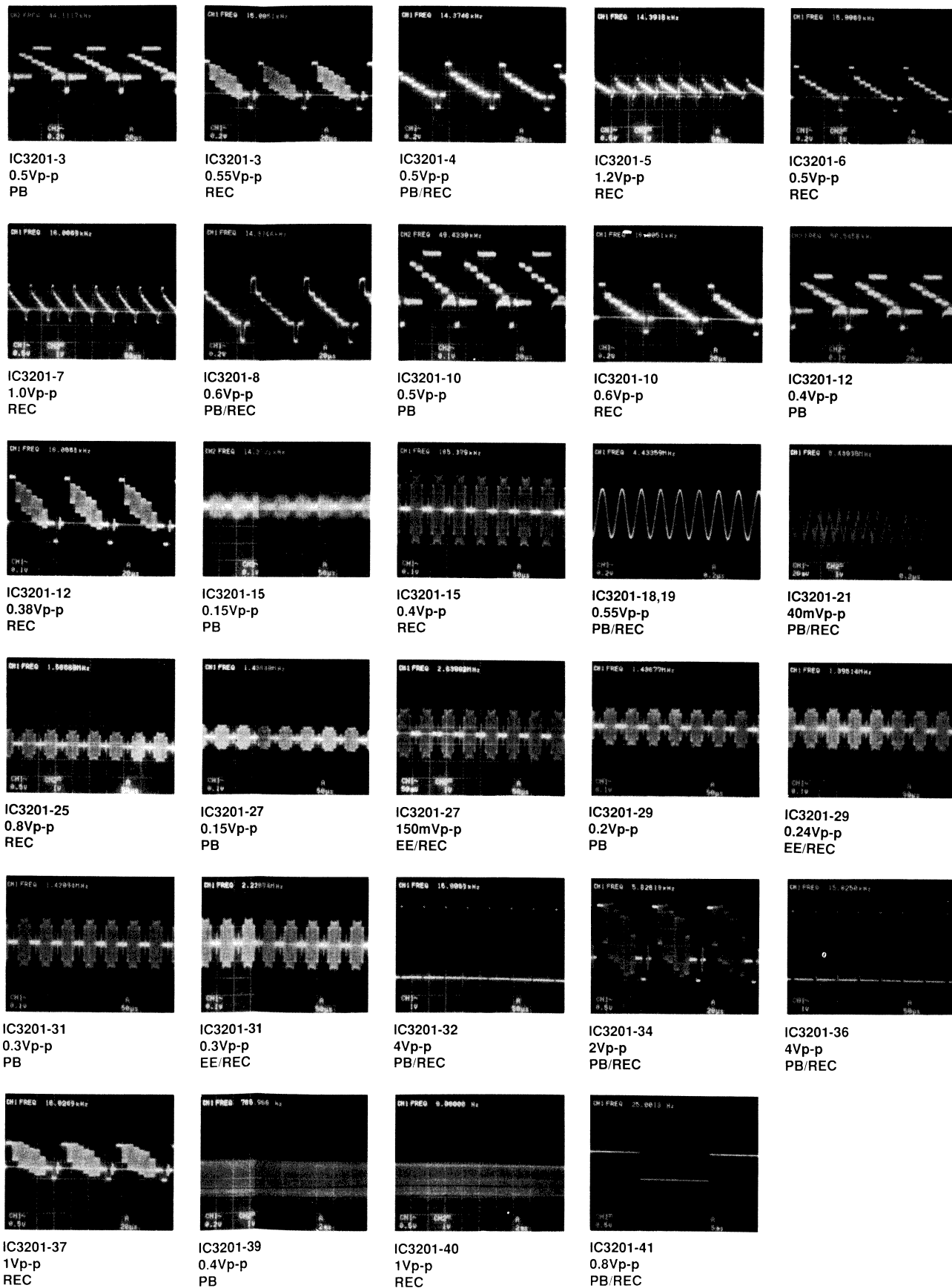
- YNR CHANGE
- MAIN DE-EMPHA 1
- MAIN DE-EMPHA 2
- CLAMP INPUT
- MAIN EMPHA OUTPUT
- MAIN EMPHA
- N.L. FILTER
- DETAIL N.L. FILTER
- VCA FILTER
- VCA INPUT
- GND
- CCD DRIVE
- PICTURE CONT. ADJUST
- ACC FILTER
- C629 INPUT/OUTPUT
- AGC FILTER/CAR-BAL
- REC APC OUTPUT
- X0 INPUT
- X0 OUTPUT
- NC CTL
- 2Fsc OUTPUT



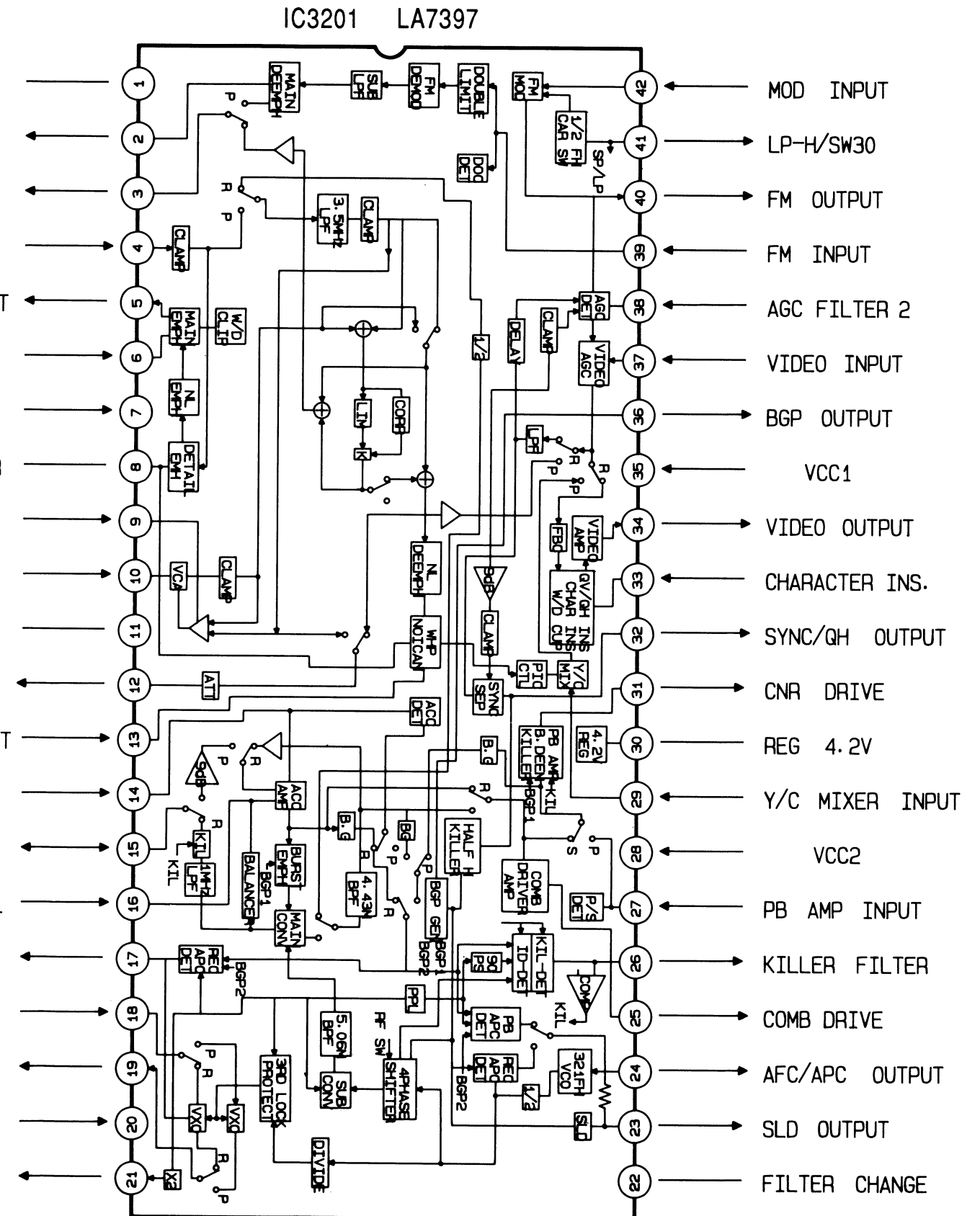
VIDEO

VIDEO

VIDEO



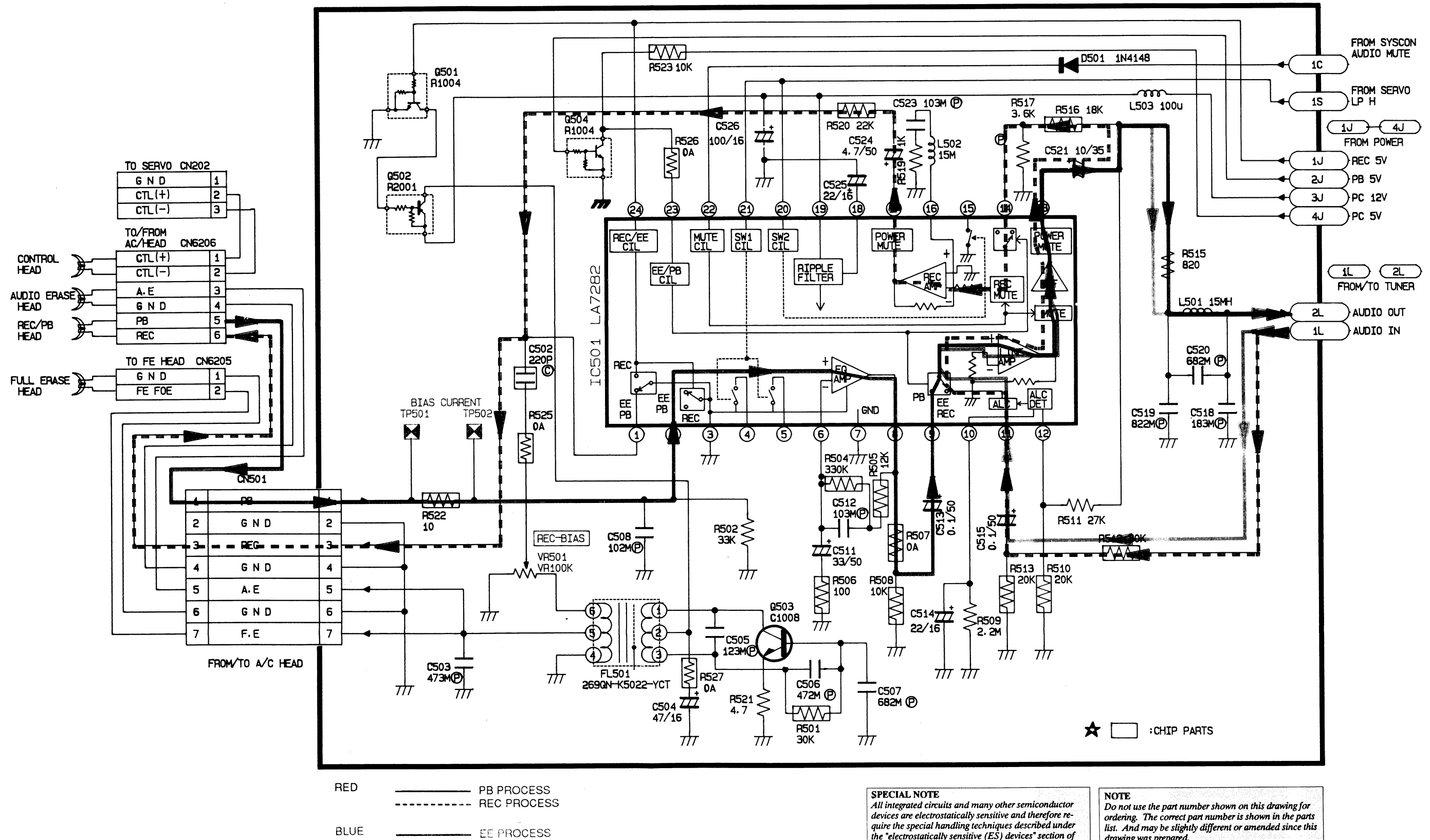
YNR CHANGE
MAIN DE-EMPHA 1
MAIN DE-EMPHA 2
CLAMP INPUT
MAIN EMPHA OUTPUT
MAIN EMPHA
N.L. FILTER
DETAIL N.L. FILTER
VCA FILTER
VCA INPUT
GND
CCD DRIVE
PICTURE CONT. ADJUST
ACC FILTER
C629 INPUT/OUTPUT
AGC FILTER/CAR-BAL
REC APC OUTPUT
XO INPUT
XO OUTPUT
NC CTL
2Fsc OUTPUT



10-6. Audio

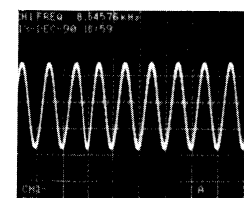
AUDIO

AUDIO

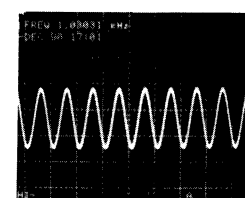


AUDIO

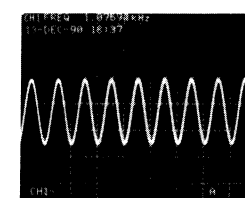
IC501			
PIN NO	MODE	STOP	REC
PIN 1	0	0	0
PIN 2	0	0	0
PIN 3	0	0	0
PIN 4	0	0	0
PIN 5	0	0	0
PIN 6	0.6	0.6	0.6
PIN 7	0	0	0
PIN 8	3.3	3.3	3.3
PIN 9	3.7	3.7	3.7
PIN 10	0.6	0.6	0
PIN 11	3.7	3.7	3.7
PIN 12	0	0	0
PIN 13	3.7	3.7	3.7
PIN 14	0	0	0
PIN 15	0	0	0
PIN 16	1.5	1.5	1.5
PIN 17	4.2	4.2	4.2
PIN 18	9.1	9.1	9.1
PIN 19	12.0	12.0	12.0
PIN 20	0	0	0
PIN 21	0	0	0
PIN 22	0	0	0
PIN 23	4.8	4.8	0
PIN 24	0	5.1	0



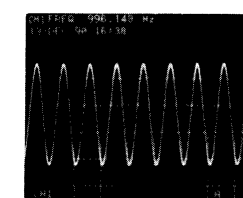
IC501-8
0.2Vp-p
PLAY



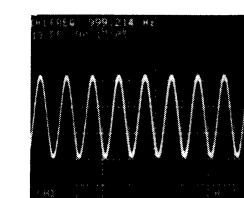
IC501-10
0.12Vp-p
PLAY



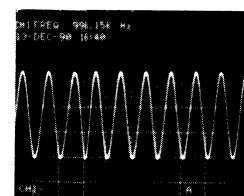
IC501-11
0.25Vp-p
STOP



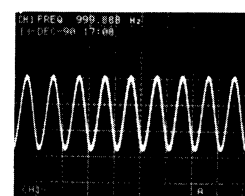
IC501-12
0.8Vp-p
STOP



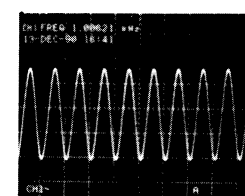
IC501-12
0.7Vp-p
PLAY



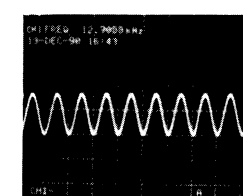
IC501-13
1.7Vp-p
STOP



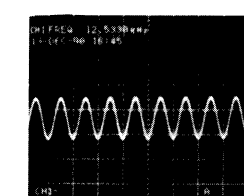
IC501-13
1.5Vp-p
PLAY



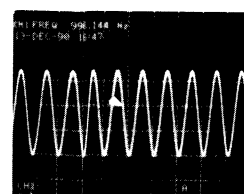
IC501-14
0.4Vp-p
STOP



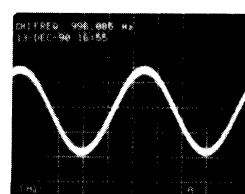
IC501-15
0.1Vp-p
STOP



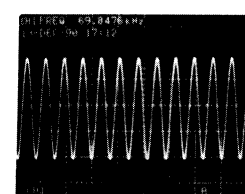
IC501-16
0.1Vp-p
STOP



IC501-17
1.7Vp-p
STOP



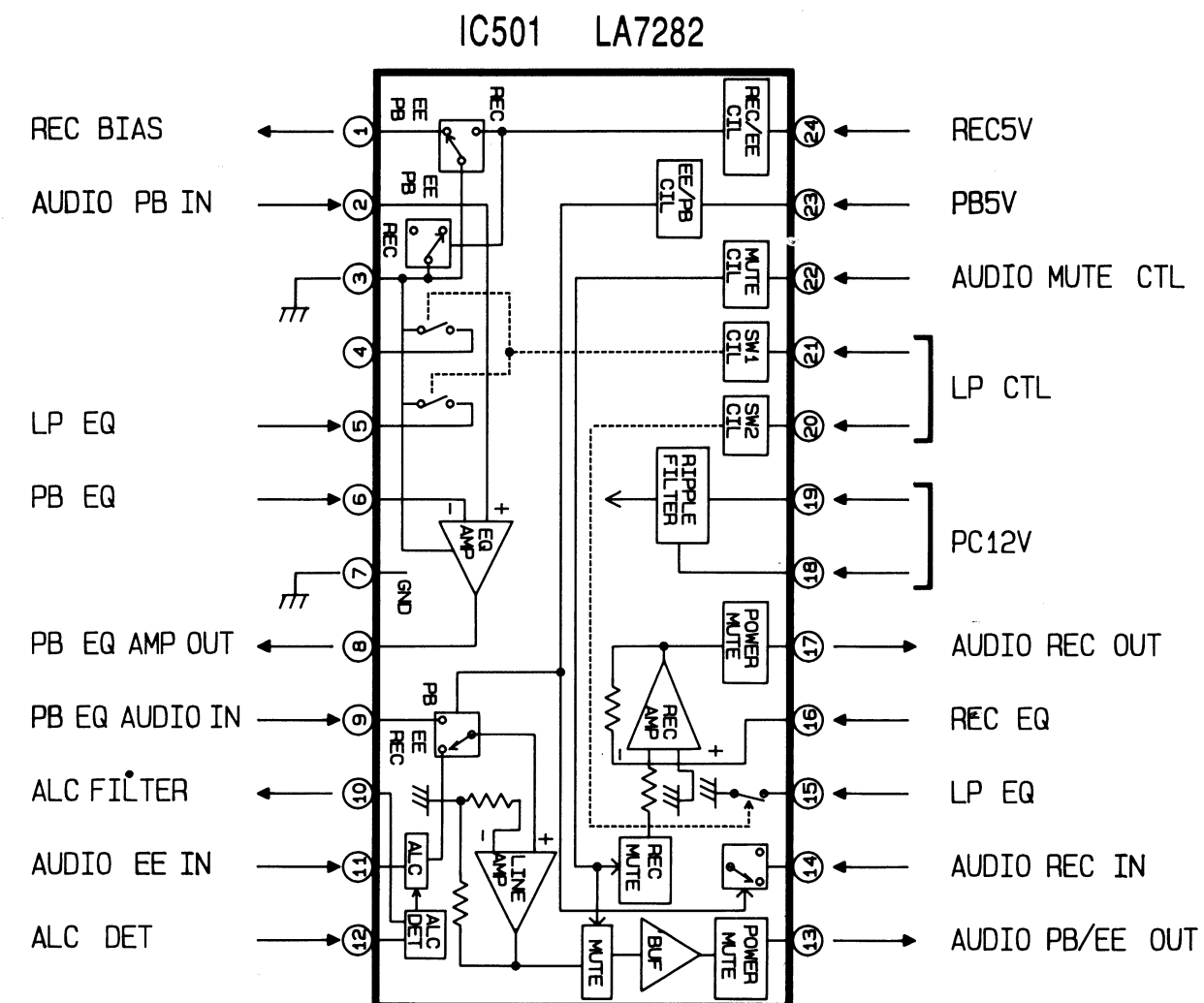
IC501-17
1.8Vp-p
REC



CN501-3
40Vp-p
REC

AUDIO

AUDIO

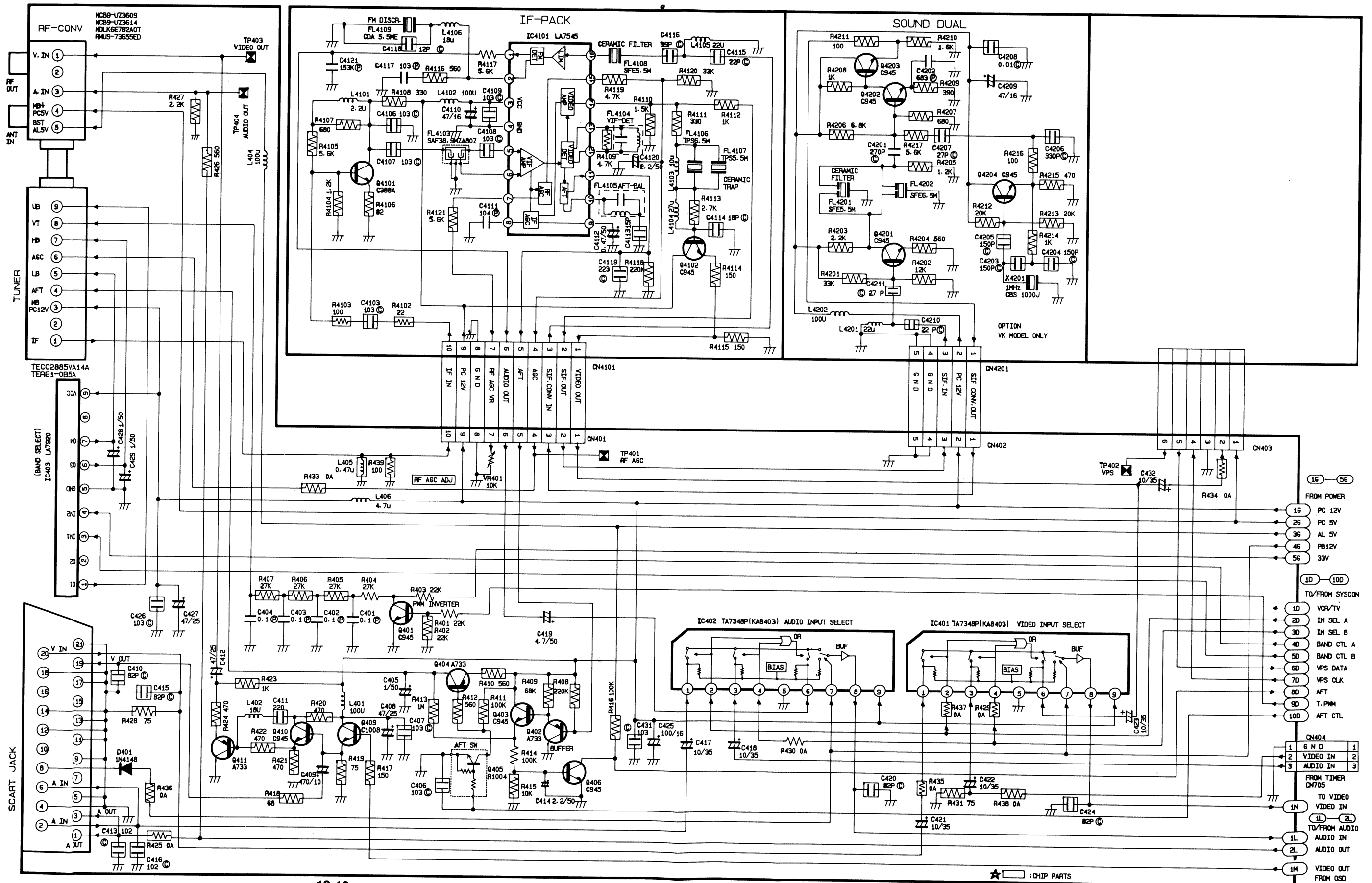


TUNER/IF-PACK

SOUND DUAL

TUNER/IF-PACK

10-7. Tuner/IF-PACK, SOUND DUAL

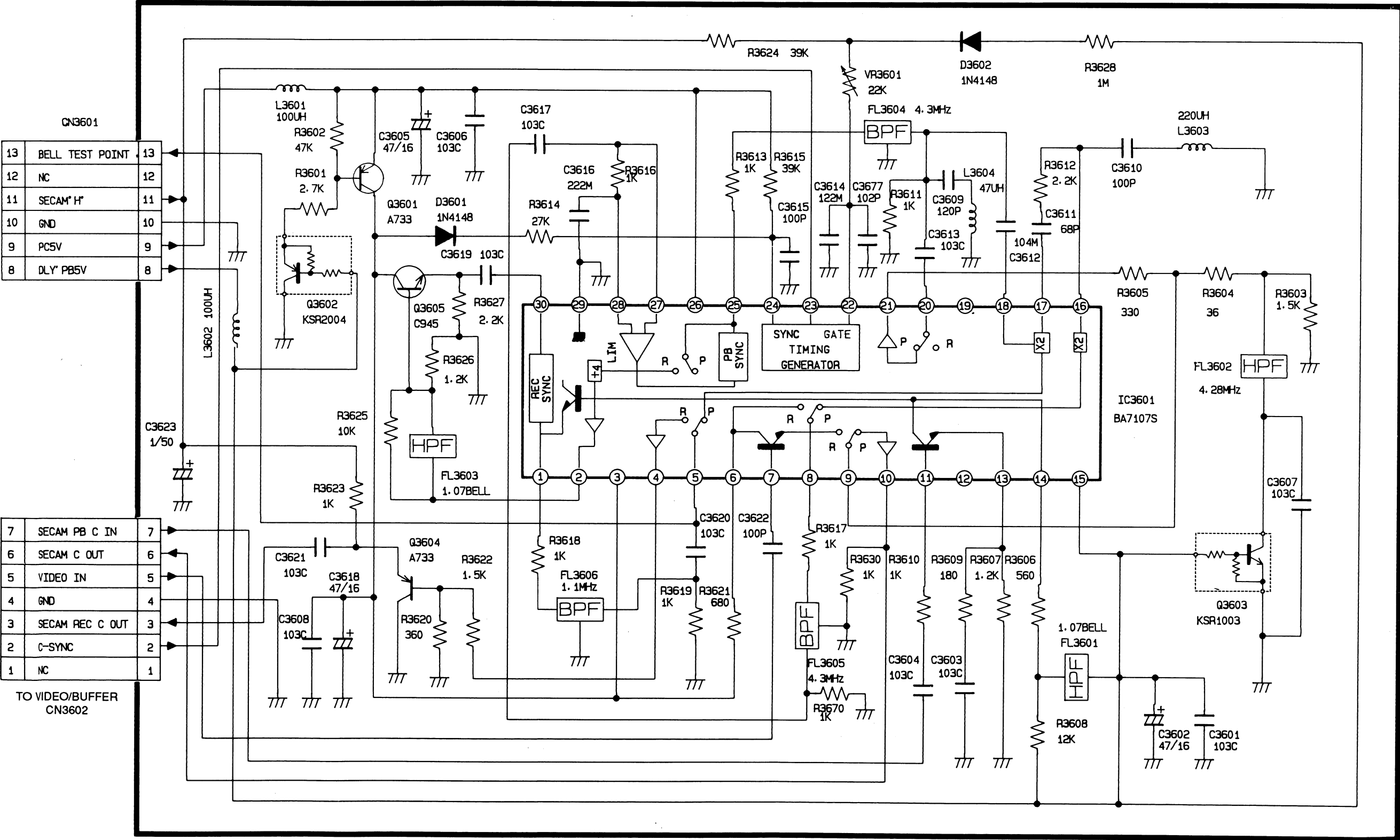


SECAM COLOR

SECAM COLOR

SECAM COLOR

10-8. SECAM COLOR



SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

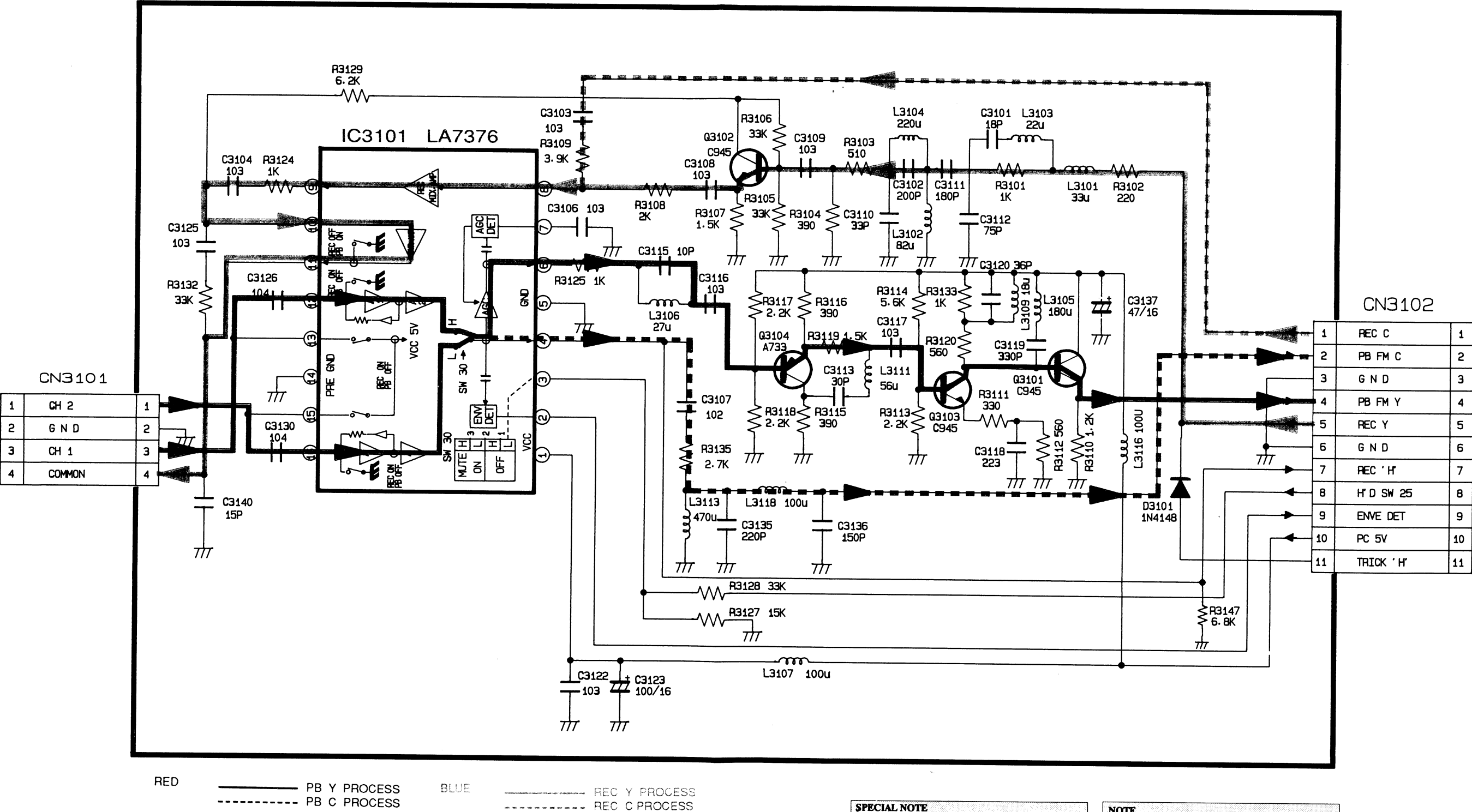
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

PRE-AMP

PRE-AMP

PRE-AMP

10-9. Pre-Amp



SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

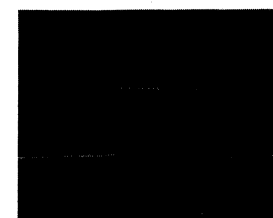
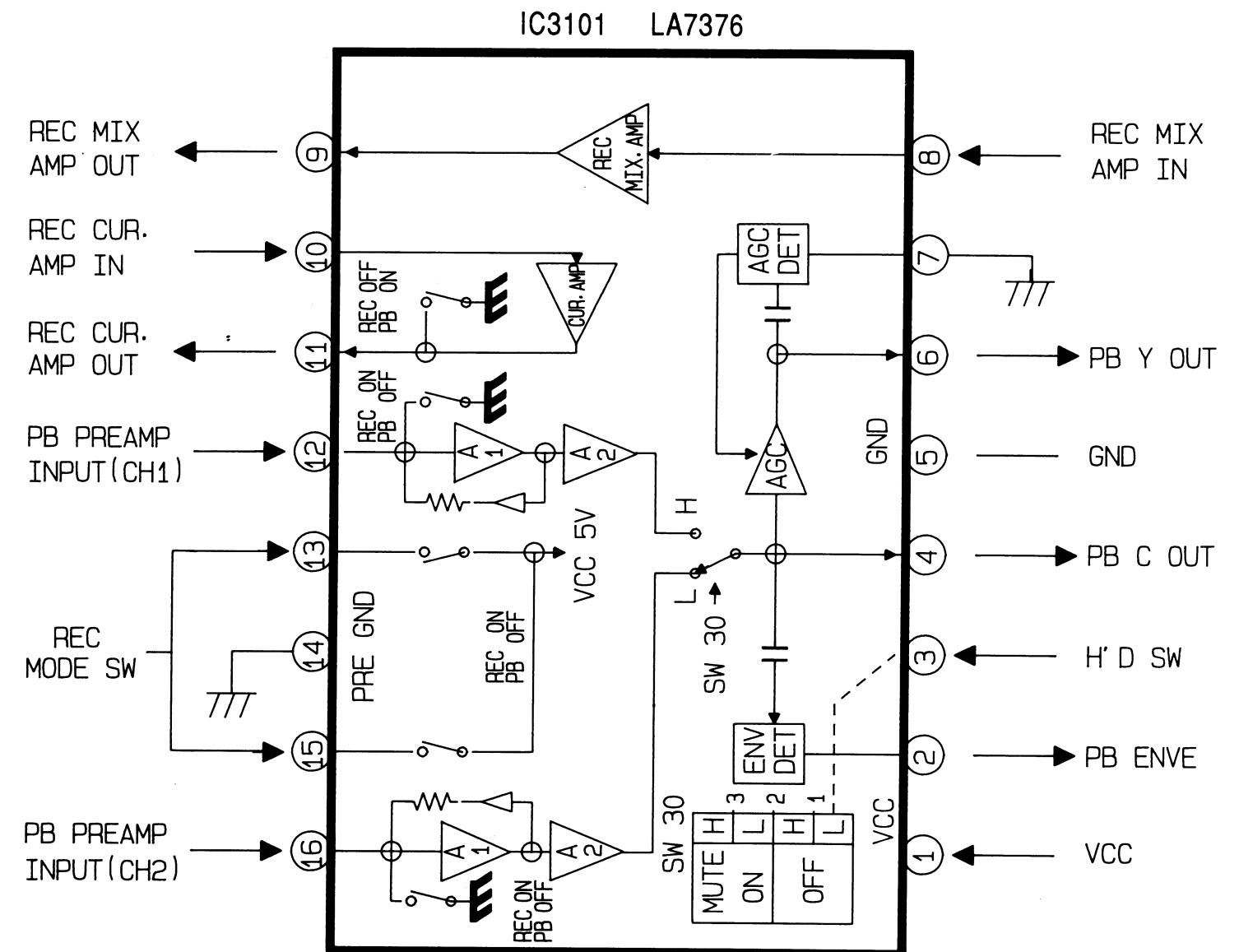
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

PRE-AMP

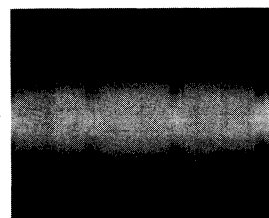
PRE-AMP

PRE-AMP

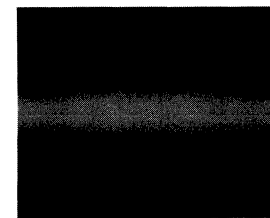
IC3101			
MODE PIN NO	STOP	REC	PLAY
PIN 1	5.0	5.0	5.0
PIN 2	0	0	1.5
PIN 3	0	1.5	1.5
PIN 4	2.0	4.5	2.0
PIN 5	0	0	0
PIN 6	2.5	4.0	2.5
PIN 7	0.8	0	0.8
PIN 8	2.0	1.8	2.0
PIN 9	0	1.8	0
PIN 10	1.5	2.0	1.5
PIN 11	0	4.5	0
PIN 12	0.7	0	0.7
PIN 13	0	4.0	0
PIN 14	0	0	0
PIN 15	0	4.0	0
PIN 16	0.7	0	0.7



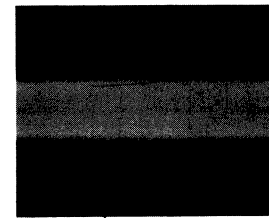
IC3101-3
5Vp-p
PB



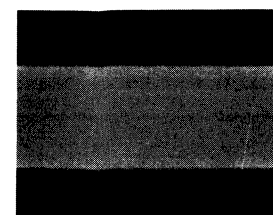
IC3101-8
80mVp-p
REC



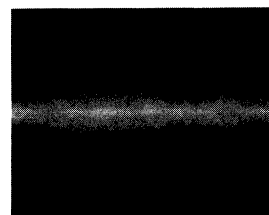
IC3101-10
0.1Vp-p
REC



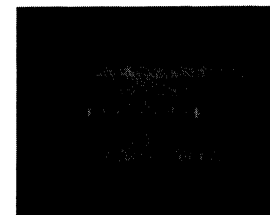
IC3101-11
0.4Vp-p
REC



CN3101-4
0.4Vp-p
REC



CN3102-2
1Vp-p
PB



CN3102-4
0.4Vp-p
PB

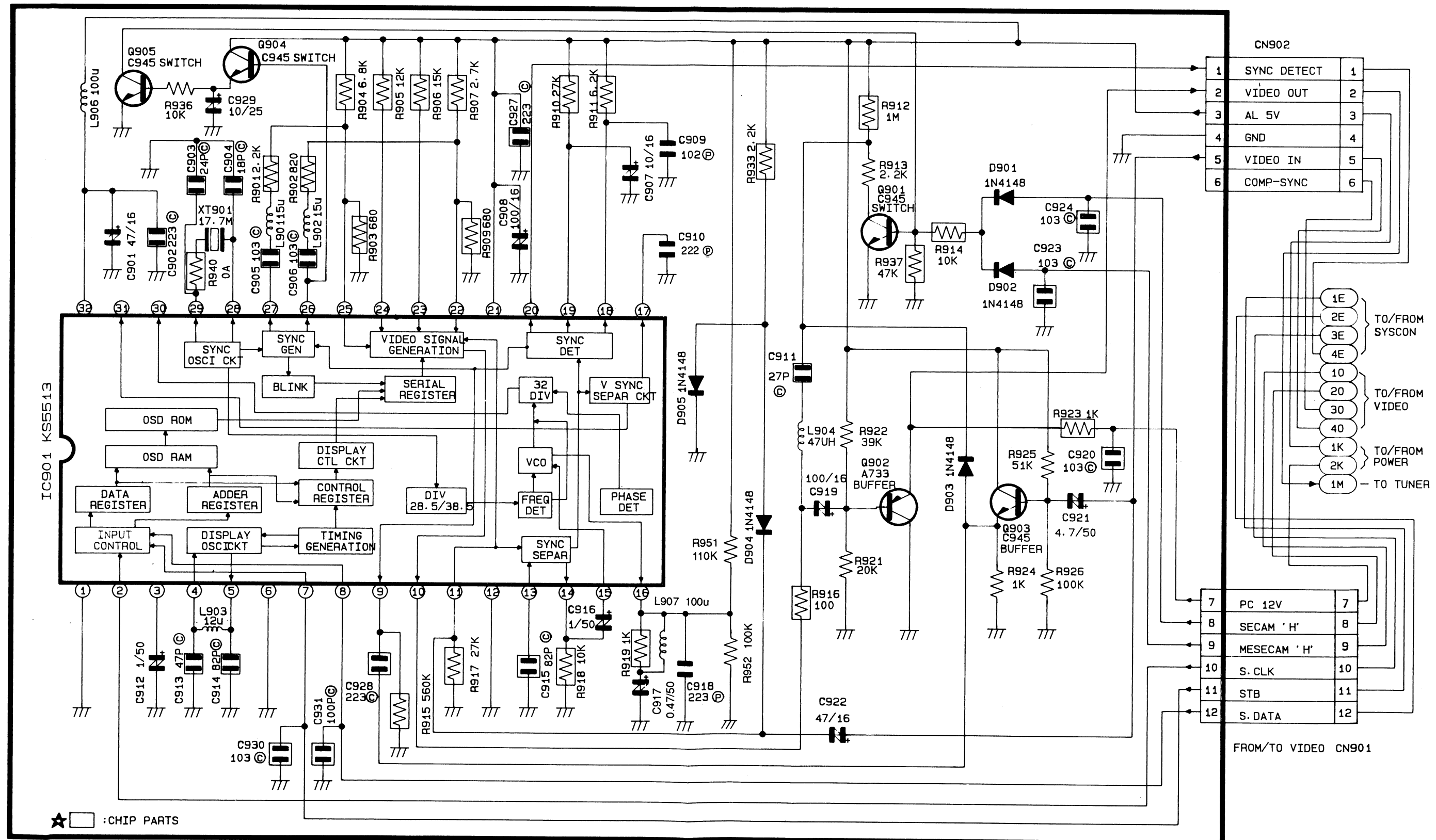


CN3102-9
PB

10-10. O.S.D

O S D

O S D



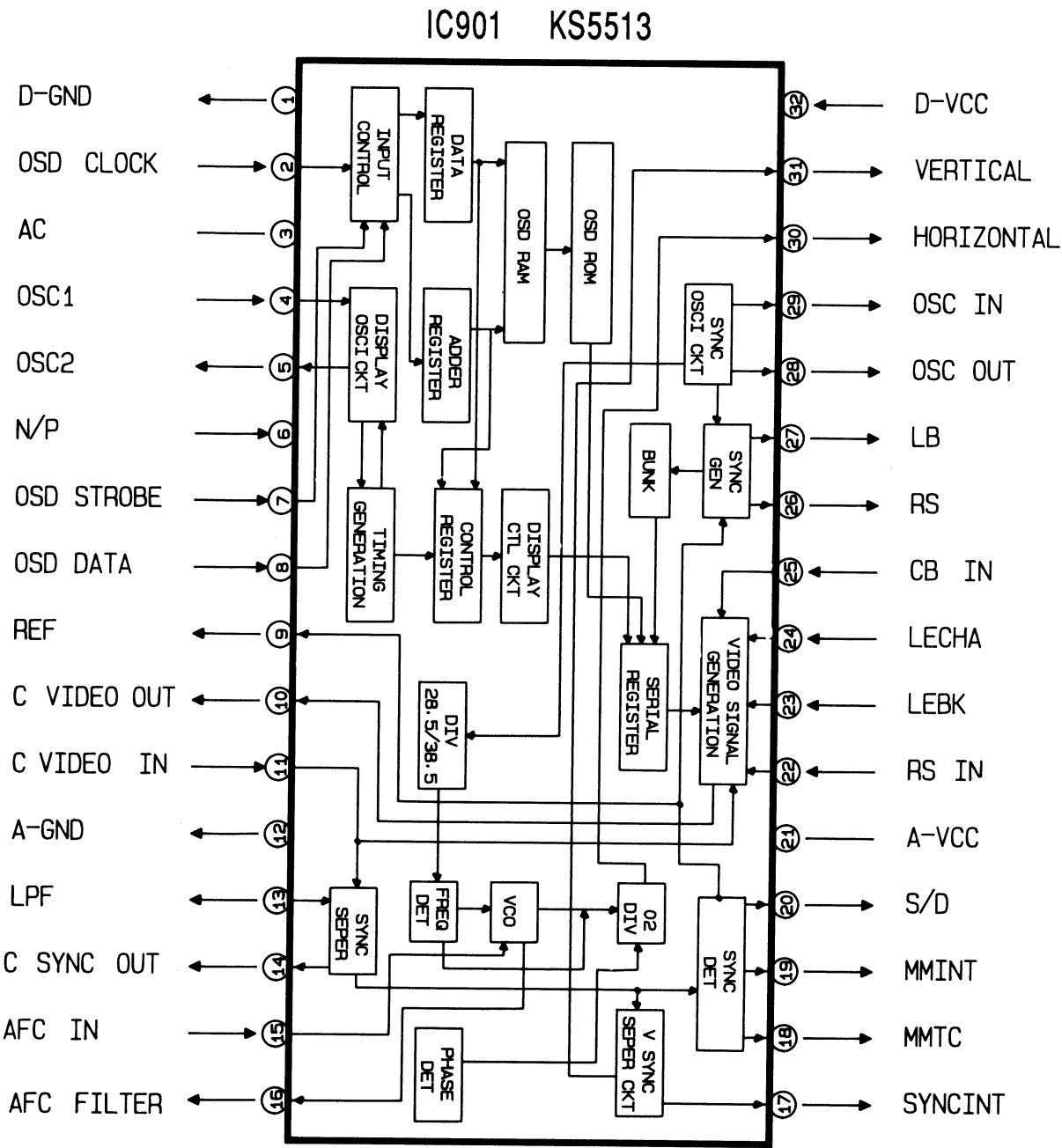
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

OSD

IC901				
PIN NO	MODE	STOP	REC	PLAY
PIN 1	0	0	0	0
PIN 2	0.4	0.4	0.4	0.4
PIN 3	4.9	4.9	4.9	4.9
PIN 4	2.0	2.0	2.0	2.0
PIN 5	2.0	2.0	2.0	2.0
PIN 6	0	0	0	0
PIN 7	3.2	3.3	3.3	3.3
PIN 8	0.5	0.4	0.4	0.4
PIN 9	1.5	2.5	2.4	2.4
PIN 10	0.9	1.0	0.9	0.9
PIN 11	0.2	1.0	0.3	0.3
PIN 12	0	0	0	0
PIN 13	1.6	2.6	2.6	2.6
PIN 14	4.0	0.5	0.4	0.4
PIN 15	0.5	0.1	0.1	0.1
PIN 16	2.3	2.3	2.3	2.3
PIN 17	4.9	0.3	0.3	0.3
PIN 18	0.6	0.7	0.7	0.7
PIN 19	4.9	1.8	1.8	1.8
PIN 20	0	4.2	4.2	4.2
PIN 21	4.9	4.9	4.9	4.9
PIN 22	1.1	1.1	1.1	1.1
PIN 23	0.8	0.8	0.8	0.8
PIN 24	2.2	2.2	2.2	2.2
PIN 25	2.8	0.6	0.6	0.6
PIN 26	2.0	0	0	0
PIN 27	2.8	0.6	0	0
PIN 28	2.4	2.4	2.4	2.4
PIN 29	2.4	2.4	2.4	2.4
PIN 30	4.6	4.6	4.6	4.6
PIN 31	0	4.9	4.9	4.9
PIN 32	4.9	5.0	5.0	5.0

OSD

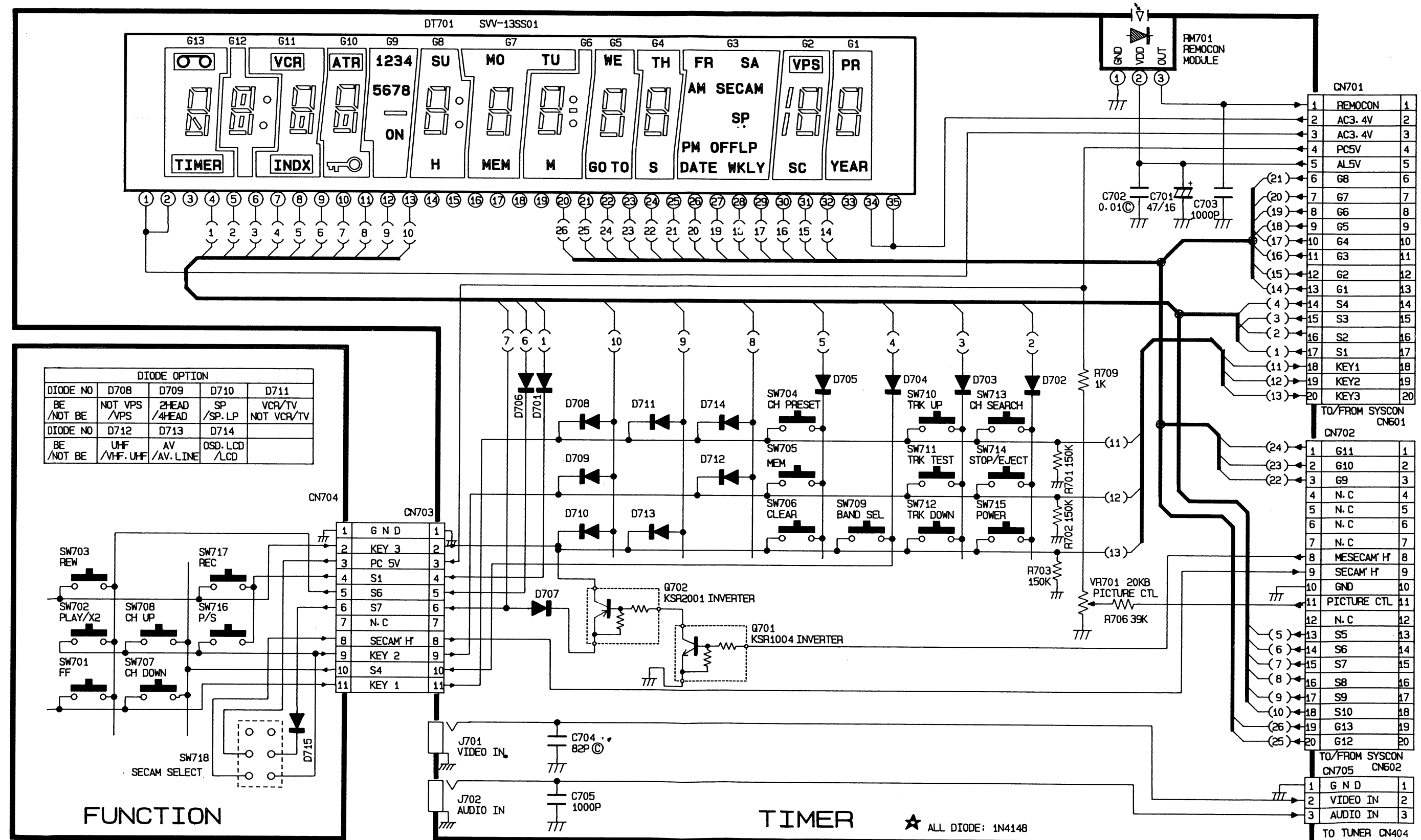


FUNCTION/TIMER

FUNCTION/TIMER

FUNCTION/TIMER

10-11. Function/Timer (VK-3260/VK-3230)



SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

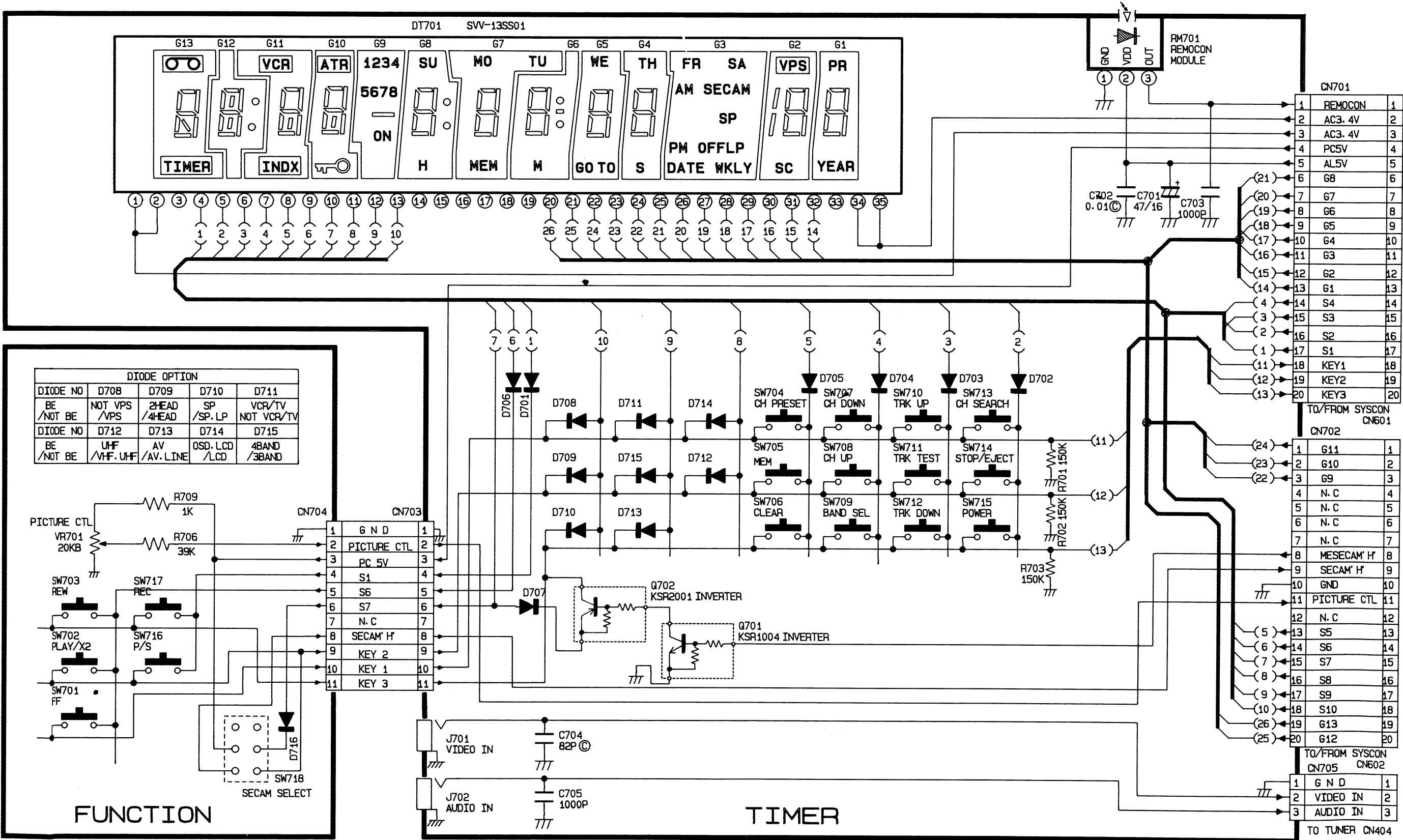
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

FUNCTION/TIMER

FUNCTION/TIMER

FUNCTION/TIMER

10-12. Function/Timer (VK-3261/VK-3231)



SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

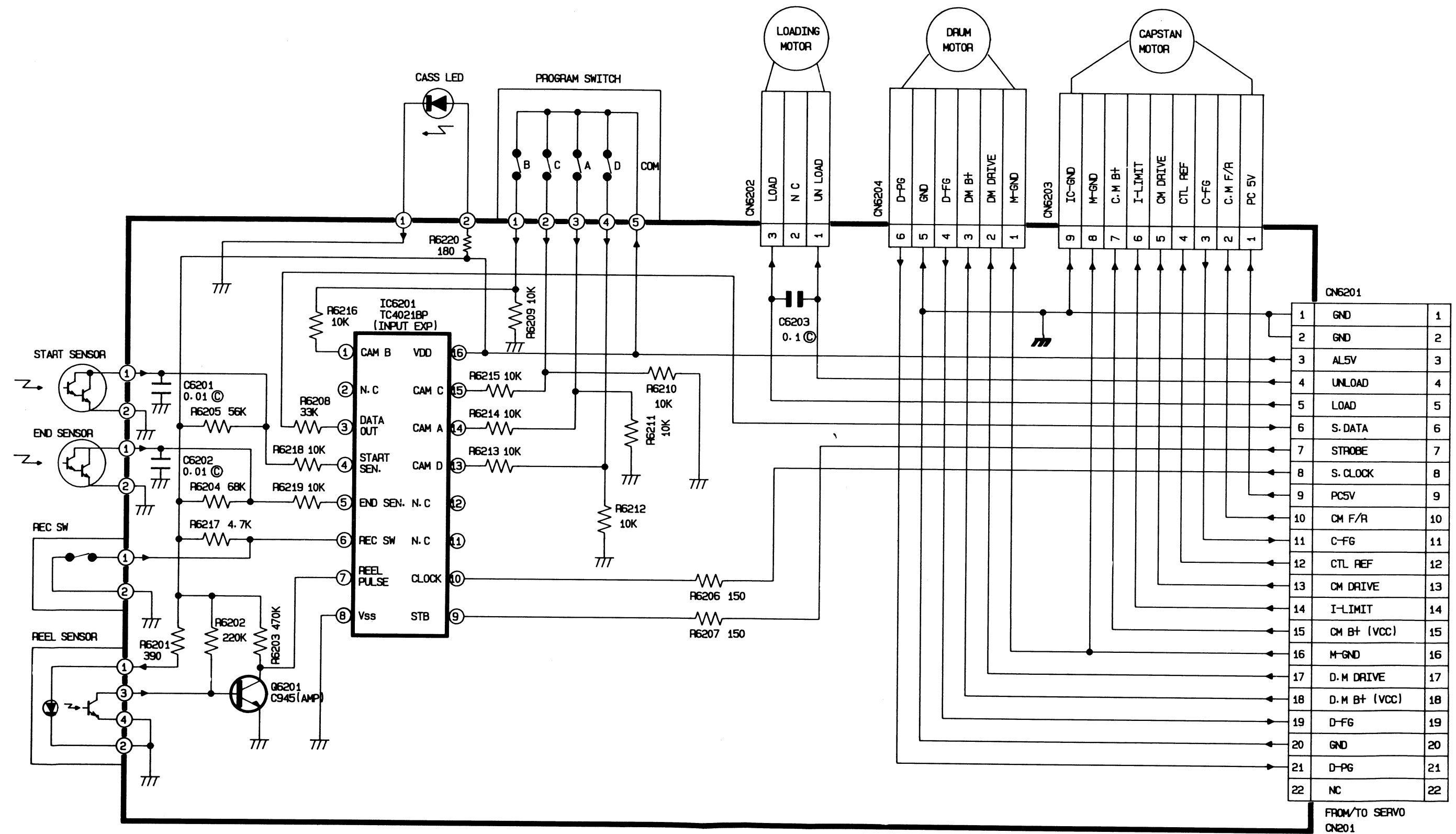
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

DECK JOINT

10-13. Deck Joint

DECK JOINT

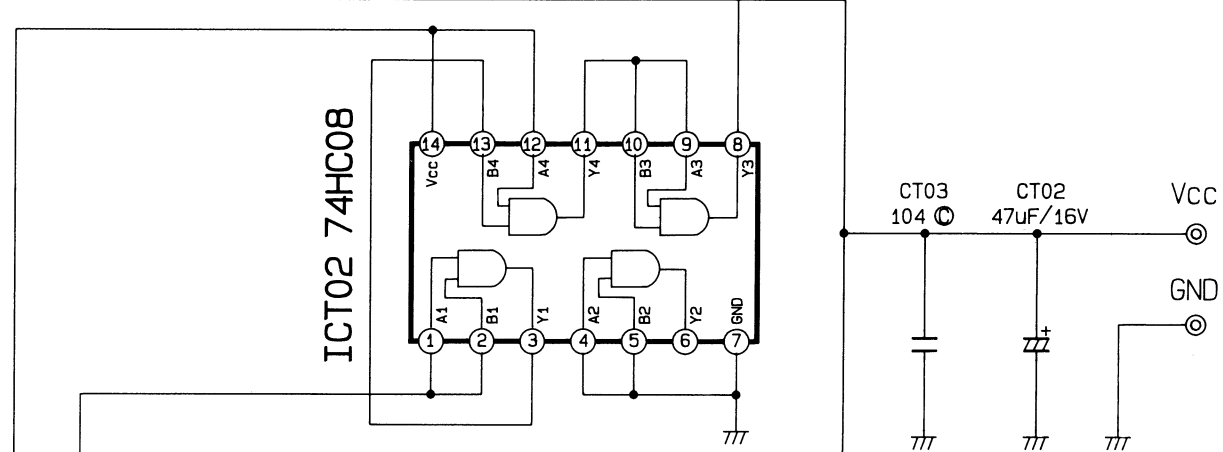
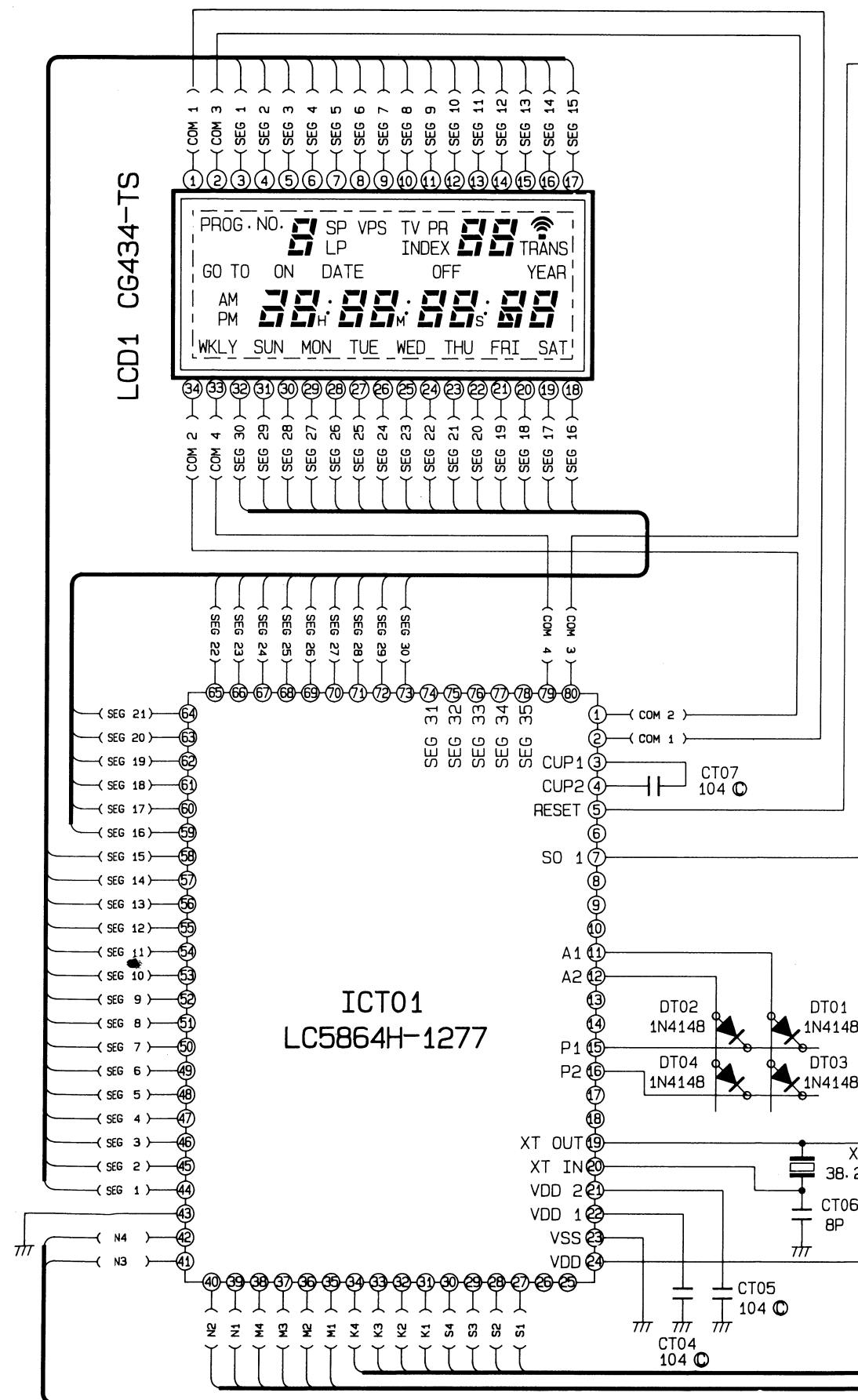
DECK JOINT



SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

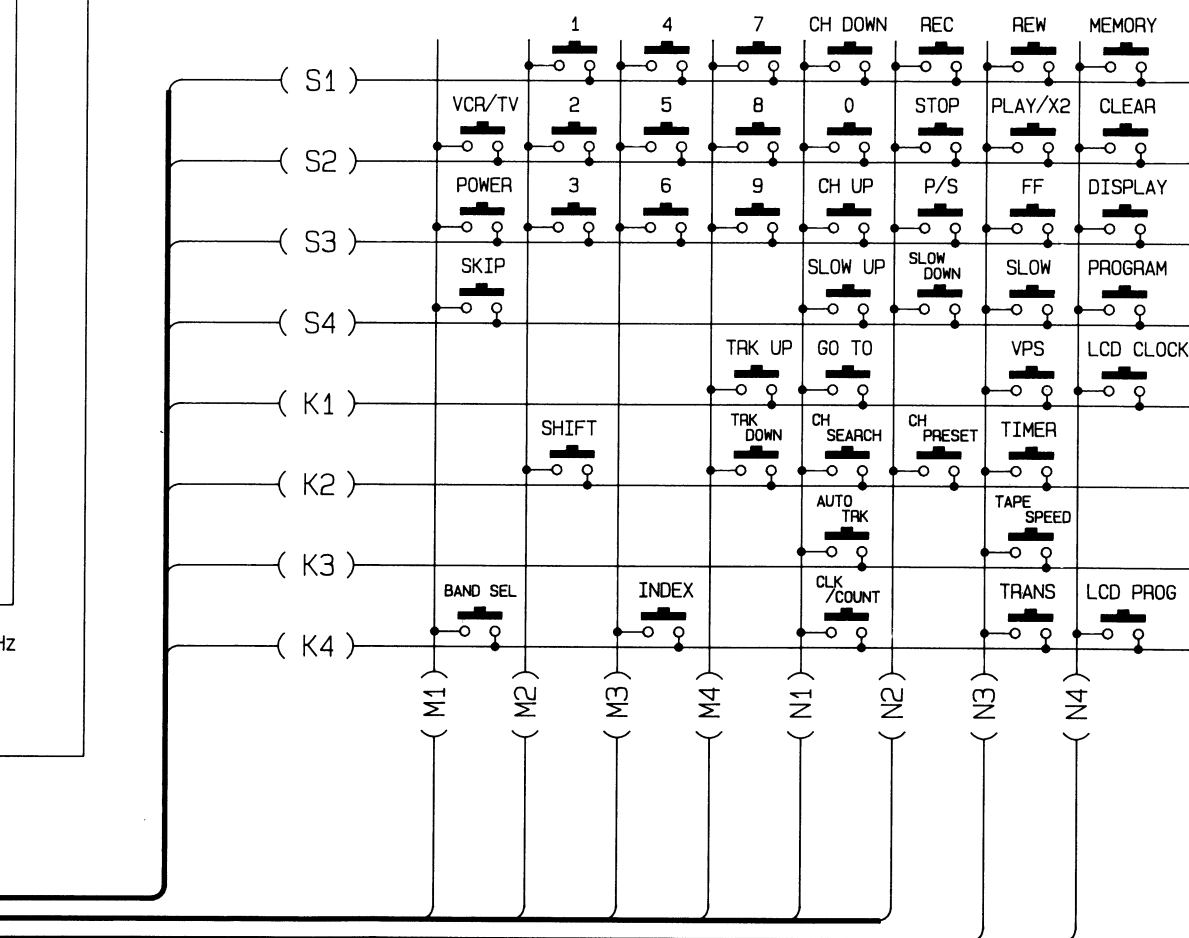
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

10-14. LCD Remote Control



***** OPTION DIODE *****

DT01 : 12HOUR
DT02 : VPS
DT03 : NO LCD
DT04 : SP/LP



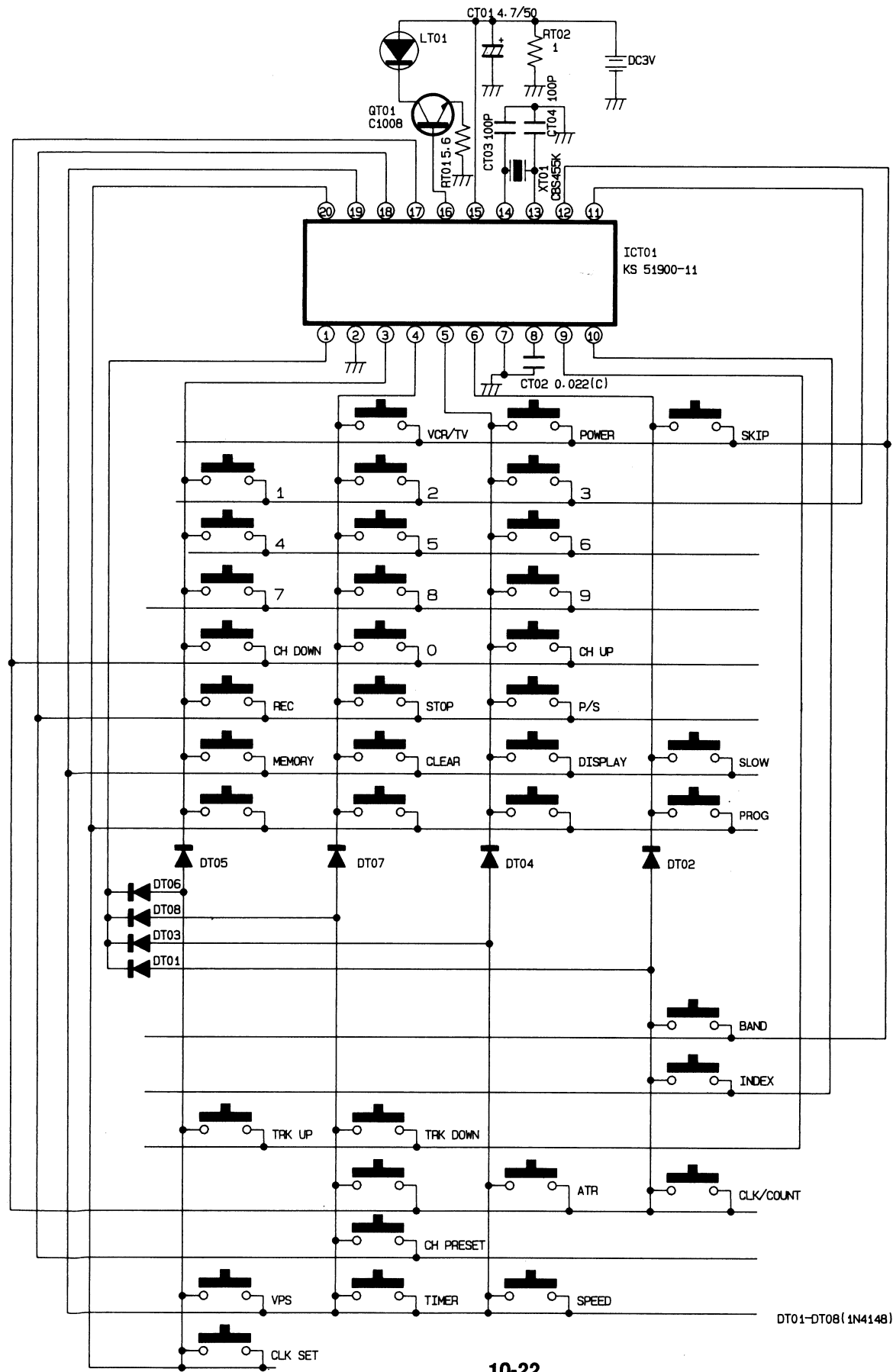
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

REMOTE CONTROL

REMOTE CONTROL

10-15. NOT LCD Remote Control



NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.